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**NANSEN STATION DATA FOR THE INDIAN  
AND PACIFIC OCEANS 1982 TO 1987**

L.J. HAMILTON

MARITIME SYSTEMS DIVISION  
WEAPONS SYSTEMS RESEARCH LABORATORY

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AMENDMENT TO WSRL-TM-30/88

Please amend your copy of WSRL-TM-30/88 Nansen Station Data for the Indian and Pacific Oceans 1982 to 1987 by L.J. Hamilton.

On page 111, delete the following lines:

$$c = -0.5025278 * 0.01$$

$$d = 0.109749 * 0.01$$

Paste the attached amendment over the deleted lines.

$$c = -0.5025278 * 0.1$$

$$d = 0.109749 * 0.1$$

Mary Linnane

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## NANSEN STATION DATA FOR THE INDIAN AND PACIFIC OCEANS 1982 TO 1987

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Nansen station data taken by Maritime Systems Division (Sydney), (formerly known as RANRL or Royal Australian Navy Research Laboratory), are presented as tables and plots. The Nansen stations were occupied in the East Indian and southwest Pacific Oceans between November 1982 and December 1987 by Royal Australian Navy oceanographic research vessels HMAS Kimbla and HMAS Cook. The data tables are also available on floppy disk.

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## INTRODUCTION

Nansen station data are listed and tabulated for thirteen cruises made between November 1982 and December 1987 in the east Indian and southwest Pacific Oceans. The Nansen data were collected from Royal Australian Navy oceanographic vessels HMAS Kimbla and HMAS Cook by the Royal Australian Navy Research Laboratory (RANRL), which became part of Maritime Systems Division of Weapons Systems Research Laboratory in 1987. Data for some of these stations have been listed elsewhere, as detailed for each cruise, but the data in this report have been revised, and these listings are intended to replace any previous ones. The basic purpose of the listings is to (a) provide a useful data set for other researchers, and (b) to ensure that the data will be placed in data banks, specifically those of the Australian Oceanographic Data Centre.

Data were taken in accordance with the procedures in Publication No. 607 of the USN Oceanographic Office "Instruction Manual For Obtaining Oceanographic Data", third edition 1968. (See also Hamilton, 1982a). Details of methods and equipment used to obtain and process the data are given in following sections, as are details of particular processing problems for each cruise. This allows quality indicators to be assigned for archival (data base) purposes, and allows determination by users of the usefulness of the data for their particular application. As a general note, bottle spacing in near surface waters is often far from ideal at a 25 m or greater vertical separation, except when mixed layers occur.

Publications which have made use of these data are referenced for each cruise, to enhance the usefulness of the data set. This memorandum does not make any further analysis of the data, except for the derivation of some temperature - salinity polynomial regression relations.

The Nansen data listed herein are available on DOS format diskette. To obtain a copy send requests to the author through the Chief, Maritime Systems Division.

## EQUIPMENT

### Ships and winches

HMAS Cook is fitted with bow thruster and active rudder which enables ship manoeuvring to keep the oceanographic wire vertical. HMAS Kimbla simply drifted during the course of a station, with only limited manoeuvring possible to keep the vessel from over-running the wire. Winch wire retrieval rates for HMAS Cook are about 80 m/min, and higher in calm conditions. Wire rate for HMAS Kimbla was usually 30 to 40 m/min.

### Deep Sea Reversing Thermometers (DSRT)

Protected type DSRT used were:

- (a) 0 to 32°C Watanabe-Keiki with 0.10°C gradations and absolute accuracy of the order  $\pm 0.03^\circ\text{C}$  or better



TABLE 1. DETAILS OF MARITIME SYSTEMS DIVISION CRUISES WHICH OCCUPIED NANSSEN STATIONS FOR 1982 TO 1987

Cruise name	Vessel (HMAS)	Period	Number of stations	Nominal depth (m)	Location
RANRL 15/82	KIMBLA	November 1982	2	400	Tasman Sea
RANRL 30/82	KIMBLA	April 1983	16	1500	South Tasman
RANRL 23/83	COOK	May 1983	18	1500	East Indian
TC 1	COOK	December 1983	12	Bottom	Tasman Sea
RANRL 1/84 (SEAMAP 1)	COOK	January 1984	8	2000	Southwest Pacific
RANRL 24/83	KIMBLA	February 1984	6	1500	South Tasman
TC2	COOK	March 1984	7	Bottom	Tasman Sea
RANRL 11/85	COOK	March 1985	9	200	East Indian
RANRL 6/85 (SEAMAP 2)	COOK	July 1985	14	Bottom	Southwest Pacific
RANRL 3/86	COOK	May 1986	1	2000	Tasman Sea
RANRL 6/86	COOK	September 1986	1	500	Tasman Sea
RANRL 1/87	COOK	May 1987	21	Bottom	Tasman Sea
MSD 2/87	COOK	November 1987	19	Bottom	Tasman Sea
			-----		
			134		

(b) for TC 1 and later cruises 0 to 6°C Cohn Precision with 0.002°C graduations and absolute accuracy better than 0.01°C.

Unprotected type DSRT used were:

(a) 0 to 32°C Watanabe-Keiki

(b) 0 to 35°C Watanabe-Keiki with low Q-factors

- (c) 0 to 60°C Watanabe-Keiki with low Q-factors
- (d) one only Negretta-Zambra 0 to 60°C with Q-factor of order 0.1
- (e) since November 1983 0 to 60°C Gohla Precision with Q-factor of order 0.1 .

The Watanabe-Keiki DSRT are calibrated for Maritime Systems Division by CSIRO (Commonwealth Scientific and Industrial Research Organisation) at irregular intervals. The Watanabe-Keiki DSRT are now from 11 to 26 years old and are therefore not expected to experience calibration shifts caused by glass movements. The Gohla-Precision DSRT are aged for 6 months by the manufacturer to minimize such problems. History cards have been maintained for the DSRT to eliminate those with unreliable performances.

It became apparent by comparison with other DSRT that one batch of Watanabe-Keiki unprotected DSRT had threes and fives interchanged in their Q-factors on the original calibration sheets (serial numbers 2750x).

The purchase of two batches of Gohla 0 to 60°C unprotected DSRT allowed later cruises to definitely confirm observations on the performances of the limited number of 0 to 60°C unprotected DSRT available previously. These observations were further confirmed by doubling up DSRT in a Niskin bottle rosette sampler used with a Plessey model 9041 CTD. It has taken some time to get enough intercomparison data but the performance details of many doubtful DSRT are now known or confirmed. This has enabled problems with several conflicting data values to be resolved or confirmed, and allowed a revision of DSRT depth and temperature data to allow formal presentation of results.

#### Nansen bottles

Watanabe-Keiki type were sometimes used for casts to 1300 m or so. Tsurumi-Sikie-Kosakusho (TSK) Nansen bottles were used for the deeper casts, and also for some shallow casts. The Nansen bottles are serviced before and after cruises. All bottles are 15 or more years old and mostly well used, ie most are well conditioned to the effects of seawater.

#### Position and time

Measurement of position for all cruises was by satellite navigation position fixing system (satnav). Some positions have been interpolated directly between the available fixes, but on others the satnav dead reckoning position is used. Since several satnav fixes usually occurred for each station, negligible errors are expected. The time given is time of messenger drop for the shallow cast, even if the deeper casts were made first. Times are GMT (now UTC) unless otherwise noted.

### NANSEN STATION DATA PROCESSING

Nansen station data were collected using the standard procedures outlined in publication 607 (US Naval Oceanographic Office, 1970). The bow thruster and active rudder on HMAS Cook were used to keep the

oceanographic wire near vertical. Oxygen samples were analysed using the Winkler method (Major and others, 1972). Salinity samples were analysed for conductivity ratio using an Autolab Inductive Salinometer Mk III model. Derived quantities such as salinity and sound-speed were calculated using the algorithms shown in Table 2. Reversing thermometer temperatures were calibrated and pressure corrected using desktop computer programs (Hamilton, 1982b) which are corrected versions of May (1969). Dynamic heights and geostrophic currents were calculated using computer programs also in Hamilton (1982b), which are corrected and updated versions of May (1969).

**TABLE 2. REFERENCES TO ALGORITHMS USED TO PROCESS NANSEN STATION DATA**

(DSRT = Deep Sea Reversing Thermometer)

Calculation	Reference
DSRT Temperature Correction	SVERDRUP (1947)
DSRT Reversal Depth	WUST (1933)
Conductivity to Salinity	LEWIS (1980)
Depth to pressure	SAUNDERS (1981)
Density - One Atmosphere	MILLERO and POISSON (1981)
- High Pressure	MILLERO, CHEN, BRADSHAW and SCHLEICHER (1980)
Potential Temperature	BRYDEN (1973)
Sound Speed	WILSON (1960)

Data were verified and checked for consistency by standard methods:

- (a) Curves of differences between DSRT thermometric depths (Z) and wire out (L) were made (the L-Z curves).
- (b) Discrepancies in temperatures and depths were resolved by examining the DSRT history and by examining data profiles, temperature-salinity (T-S) curves, and derived parameters such as density ( $\sigma_t$ ) and anomaly of specific volume.
- (c) Cruises RANRL 1/87 and MSD 2/87 used Nansen bottles strung on CTD (Conductivity Temperature Depth profiler) wire, so that CTD data could often be used to resolve doubtful values.

(d) In some cases T-S polynomials could be constructed for parts of the water column to fill in data sets where eg the salinity sample was lost, but the depth and temperature data were good. These values are not included in the tables, EXCEPT FOR CRUISE MSD 2/87 (where they are marked accordingly), but are shown before the Nansen data listings proper. The T-S polynomials are also given in notes before the listings.

In the tables OBS stands for observed values, and ISL for interpolated values. The interpolation scheme is a simple 3-point Lagrangian, with linear interpolation used when the Lagrangian interpolation falls outside the range of the observed values in the depth interval. This scheme is fairly robust, but does occasionally throw up skewed values. Dynamic heights are computed using linear interpolation and trapezoidal integrations between observed values.

### THE DATA

Nansen data listings and plots for the thirteen cruises are given on following pages, in the order shown in Table 1. Notes are given before the listings for each cruise on data processing problems, doubtful data, and references to publications arising from the cruise, which are not necessarily concerned with the Nansen data.

Positions for southwest Pacific Nansen stations listed in this memo are shown on the map below. Positions for all other stations, which were occupied in the southeast Indian Ocean, are shown on page 23. Local maps are also given for major surveys.

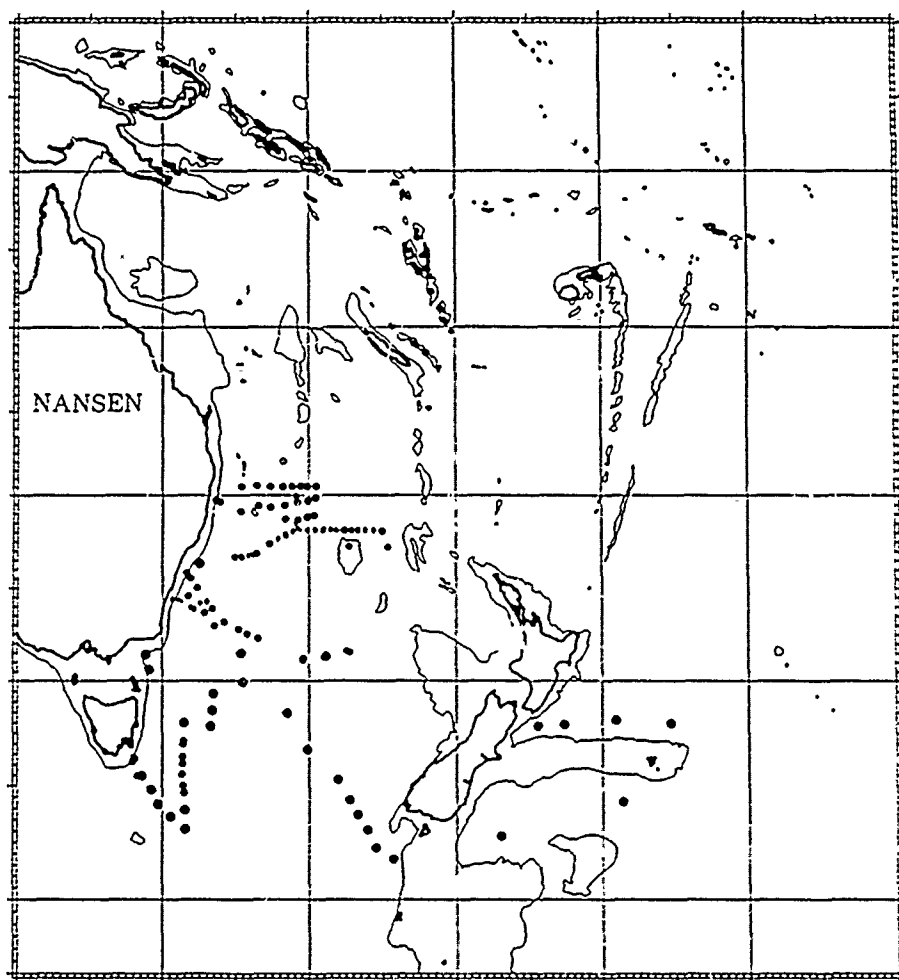


Figure 1. Nansen station positions in the south-western Pacific Ocean 1982 to 1987

### Cruise RANRL 15/82

#### *Notes for cruise RANRL 15/82*

All depths for station 2 are from wire angle only. (Three Nansen bottles were lost when the bottom shoaled quickly, and no unprotected thermometer data were obtained.) The Nansen station data are listed overleaf on page 8, and the station positions are shown plotted on page 98, with station positions for other surveys.

#### *Additional data for cruise RANRL 15/82*

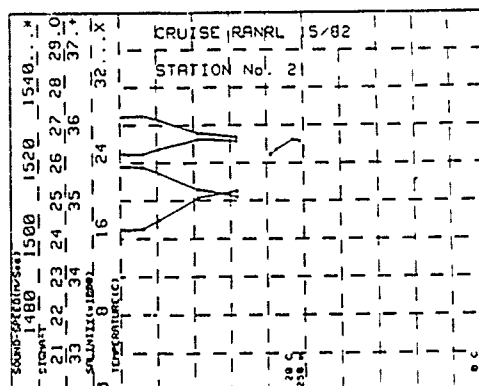
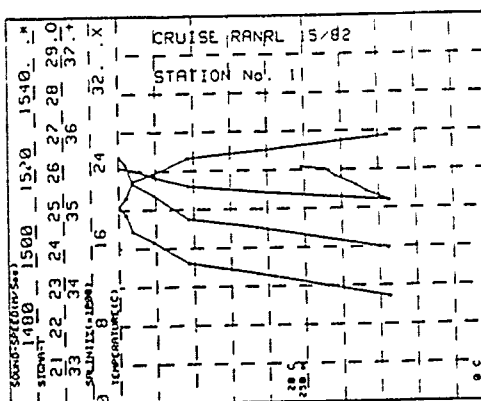
Mulhearn, P.J. (1986)

"Studies of the East Australian Current off Northern New South Wales".

RANRL Technical Note No. 6/86.

Note: Nansen station data taken during a cruise in May 1983 also discussed in the document are not included in the present compilation because temperature values are not sufficiently accurate.

STATION 1									
DATE: 20/11/1982									
TIME: 1219 LOCAL									
RANRL 15/82									
DEPTH: 410									
DEPTH	TEMP	SALINITY	SILICA-T	A.S.V	CL/T	DI	POT. TEMP	S.S	dyn. a
°	°C	Ppt		CL/T	ML/L	°C	°C	M/Sec	
015	28.37	35.510	25.077	287.5	0.00	28.37	1521.8		
035	19.48	35.518	25.384	286.2	0.00	19.48	1521.5		
055	17.70	35.518	25.728	286.2	0.00	17.70	1521.5		
085	16.40	35.518	25.923	286.5	0.00	16.43	1513.7		
095	14.40	35.518	26.376	171.4	0.00	14.43	1507.5		
095	13.78	35.520	26.499	152.3	0.00	13.79	1505.3		
095	13.07	35.518	26.077	124.8	0.00	13.03	1499.6		
162	28.37	35.51	25.077	287.5	0.00	28.37	1523.8		
151	19.48	35.53	25.384	284.2	0.00	19.48	1521.5		
151	17.52	35.49	25.766	272.7	0.00	17.52	1516.1		
151	16.46	35.41	25.938	285.5	0.00	16.46	1513.7		
151	15.17	35.34	26.193	183.5	0.00	15.16	1509.5		
151	14.36	35.29	26.338	178.4	0.00	14.35	1507.3		
151	13.77	35.25	26.439	163.0	0.00	13.75	1506.2		
151	13.14	35.21	26.527	155.8	0.00	13.11	1501.9		
151	12.48	35.17	26.629	146.4	0.00	12.45	1501.4		
151	11.78	35.14	26.727	137.1	0.00	11.74	1501.8		



## Cruise RANRL 30/82

*Notes for cruise RANRL 30/82*

The stations were made as a top cast (nominally to 300 m), and a deeper cast to 1500 m. The depths of the top cast for stations 1, 3, 7, 9 are computed from wire angle, and the mixed layer depth (MLD) given by expendable bathy-thermograph (XBT) temperature profiles. Station 7 has one depth (185 m) positively given for a sample bottle fitted with two unprotected reversing thermometers. The other top cast depths for station 7 are uncertain because of winch operator error and thermometer malfunction. These points are not used to calculate derived quantities. This is unfortunate as the station showed a large temperature inversion in XBT traces. Station 3 has one depth from an unprotected thermometer which was erratic at the start of the cruise.

Station	Wire angle (degrees)	XBT #	MLD (m) from XBT	Cast depths determined to:
1	15	55, 56	85, 84	291
3	30	64	85 *	260
7	25	106	80	77
9	30	115	36 **	130

\* For station 3, the unprotected DSRT depth and depth computed from wire angle were within 12 m at 200 m, and 18 m at 300 m.

\*\* For station 9, the data at 130 m is doubtful.

Nansen data in the mixed layer are assumed to be good values and are included in the tables. Other top cast values for these stations showing depth correspondence with co-incident XBT are also assumed to be good data and are included in the listings. They can be determined from the above table.

Additional data are available for some depths not in the tables eg temperature-depth values where the salinity sample was lost, or temperature-salinity data where the depth is not positively known. These values were used in the overplot of T-S curves and the scatter plot of T-S values shown on page 13.



*Additional Nansen data for RANRL 30/82*

Depth (m)	T	S	
Between 77 and 185	14.38	35.39	Station 7
"	11.95	34.84	
Between 210 and 287	11.43	35.04	
198	11.40	X	Station 15

*Other sources of data for cruise RANRL 30/82*

Hamilton, L.J. (1982)

"Cruise Leader's Report for HMAS Kimbla Cruise, RANRL 30/82 (15 April to 6 May 1983)".

(Unpublished document)

Gives temperature cross-sections for Sydney to Hobart, and Hobart to 47°S, 151°30'E with brief discussion

Hamilton, L.J. (1983)

"Comparisons of Sea-Surface Temperature Obtained From Ship and Satellite Data".

RANRL Tech. Memo. (Ext) No. 8/83

Compares SST from HMAS Kimbla XBT with GMS and NOAA satellite derived values. Diagrams of SST versus cumulative ship distance travelled for the Kimbla cruises are available from the author, but not included in the report.

Jeffrey, M.Z. (1984)

"Analyses and Report of Oceanographic Data From HMAS Kimbla Cruises 30/82, 24/83 to South Tasman Sea".

Ocean Sciences Institute Report No.7. The University of Sydney

Contains tables of the Nansen station data with temperature and salinity cross-sections, T-S curves, geostrophic current profiles, and data analysis. (Cruise RANRL 24/83 is a follow up cruise in the same area).

Note: Several erroneous data values are included in the tables - this affects some derived data and cross-sections. The data in the present report has been reworked.

Jeffrey, M.Z. (1986)

"Climatological Features of the Subtropical Convergence in Australian and New Zealand waters".

Ocean Sciences Institute Report No.17. The University of Sydney.

Uses the data for cruises RANRL 30/82 and RANRL 24/83 with historical data to examine the Subtropical Convergence.

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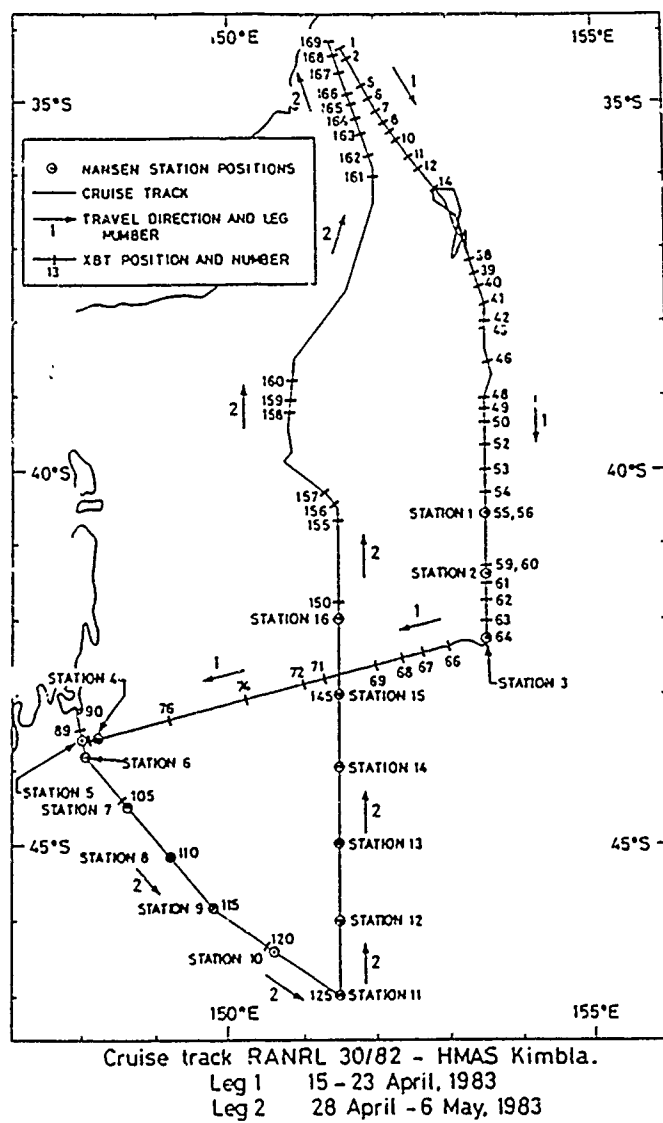


Figure 2. Nansen station positions for survey RANRL 30/82

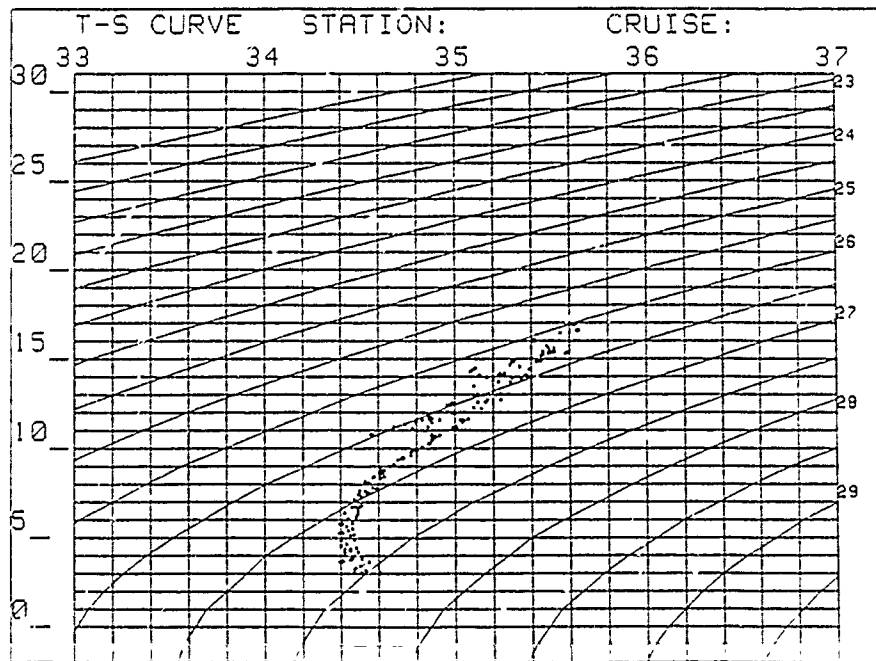
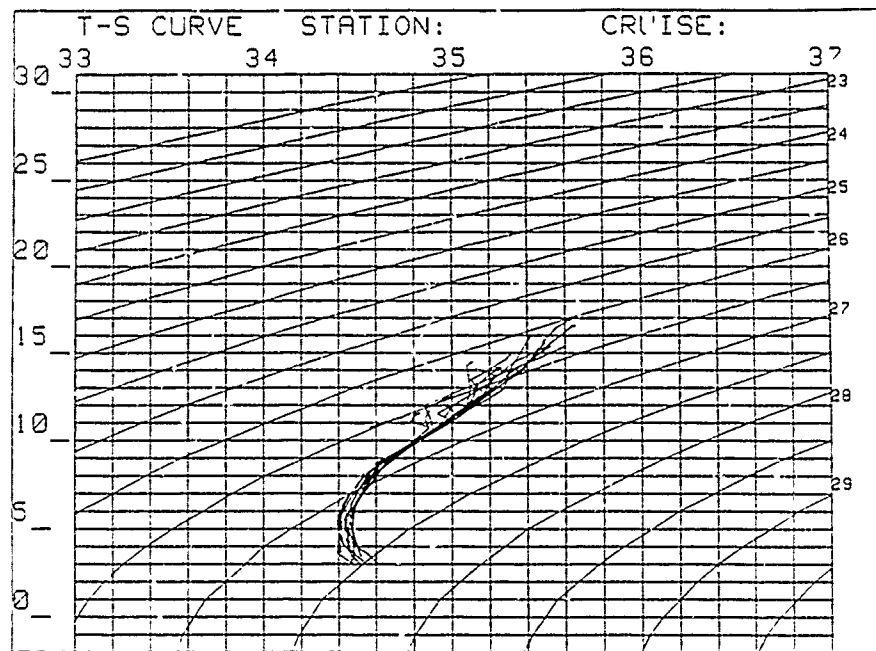


Figure 3. Temperature-salinity curves and scatter plot for cruise RANRL 30/82

STATION #

DATE= 19/04/1963

40 343

153 31E

RANGL

30/82

DEPT/TH

4800

TIME= 2342 GMT

DEPTH

TEMP

SALINITY

SIGMA-T

A S V

CL/UT

OT

TEMP

S.S

H/50m

Dyn #

005

0

15 960

35 420

26 078

192.4

0.00

15 96

35.620

26 020

197.7

0.00

16 81

1516.0

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005

24

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15 910

35 300

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160.7

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15 90

35.360

26 243

179.2

0.00

15 37

1510.6

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005

145

13 000

35 280

28 811

145.0

0.00

12 94

35.040

28 473

156.4

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183

12 990

35 290

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12 99

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0.000

005

211

13 330

35 050

26 717

129.8

0.00

11 49

35 040

26 715

137.7

0.00

11 49

1500.0

0.000

006

441

10 240

34 890

29 804

133.2

0.00

10 19

34 800

28 820

131.2

0.00

8 81

1496.9

0.000

006

822

8 870

34 630

26 873

128.4

0.00

8 80

34 610

26 818

123.8

0.00

8 26

1484.0

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26 997

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4 78

34 480

27 208

82.9

0.00

4 31

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0.000

006

1362

3 830

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27 414

77.2

0.00

3 72

34 510

27 414

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0.00

3 37

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0

15 96

35.42

26 078

192.4

0.00

15 96

35.620

26 020

197.7

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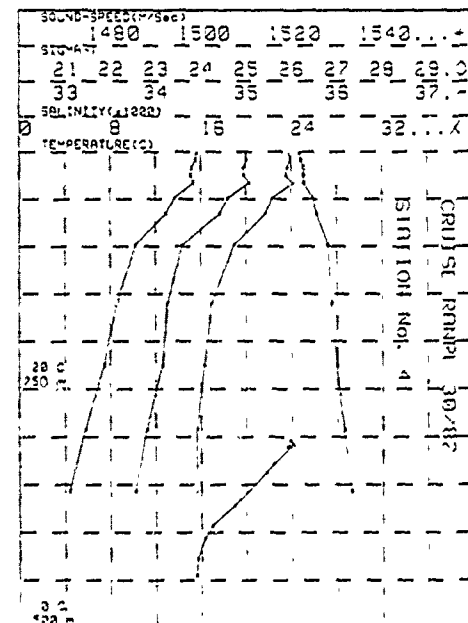
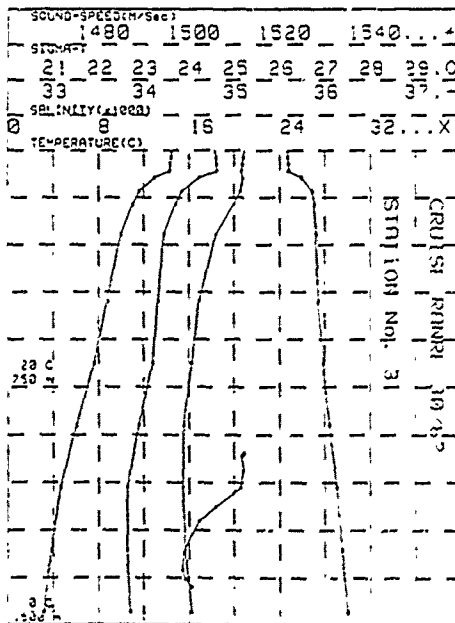
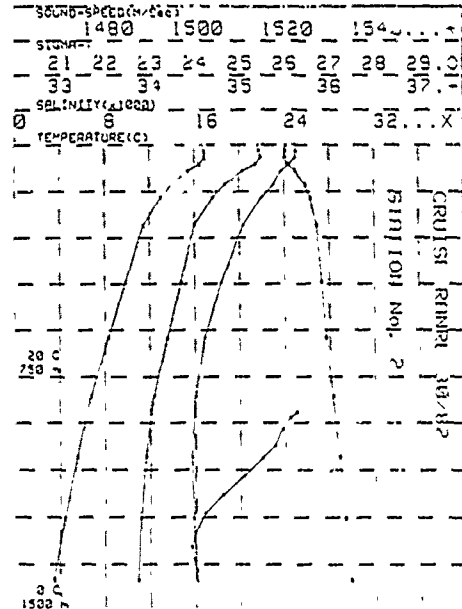
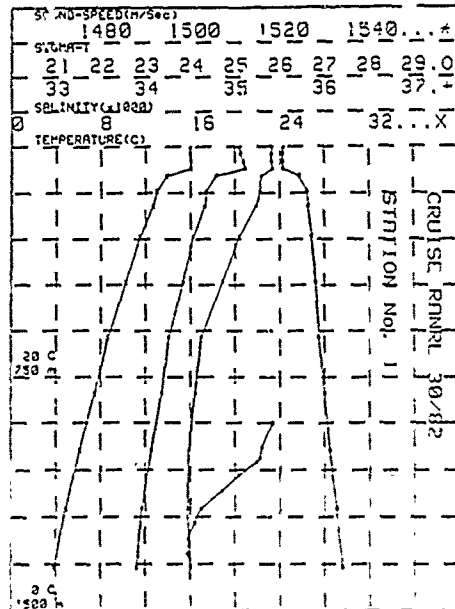
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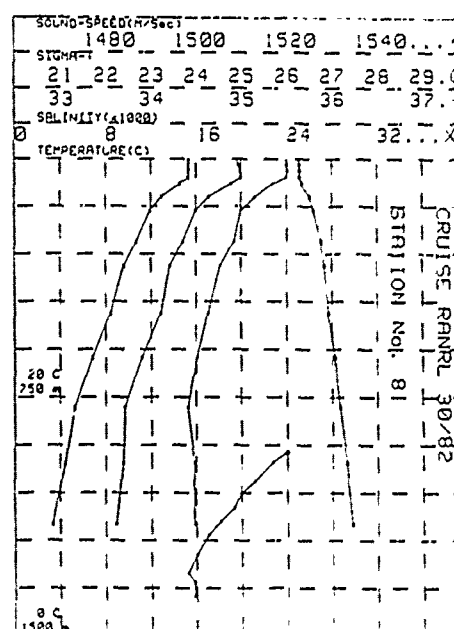
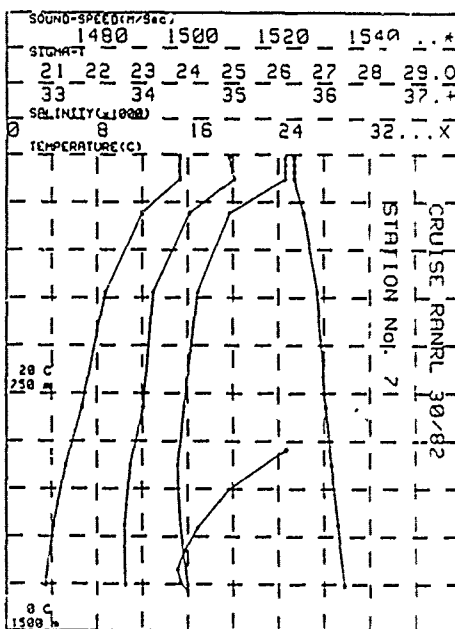
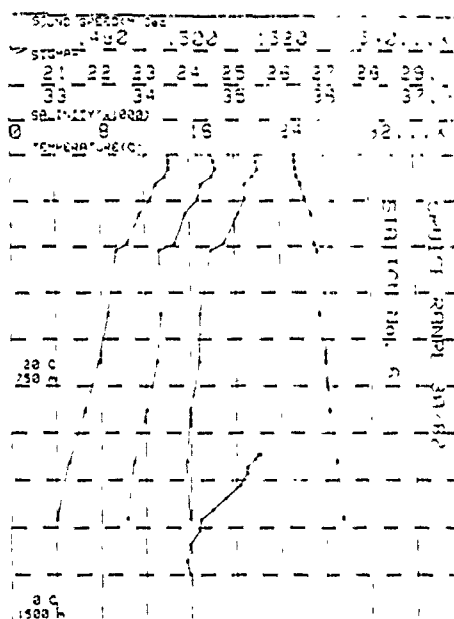
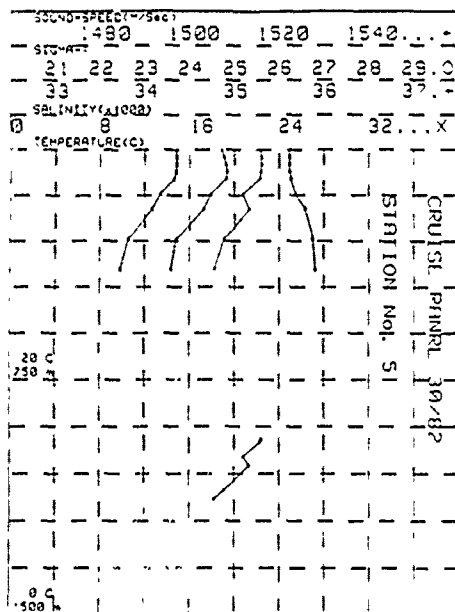


STATION 5 DATE= 28/04/83									
43.378 147.586 TIME= 1319 GMT									
RANGE 30/82 DEPTH= 500									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OC	POT.TEMP	S.S	Dyn. #
#	°C	Ppt	°C	°C	°C	°C	°C	°C	
0	14.850	35.300	26.217	177.2	0.00	14.86	1907.3		
25	14.870	35.310	26.240	177.6	0.00	14.87	1907.8		
50	14.878	35.310	26.240	178.3	0.00	14.88	1908.2		
75	14.850	35.300	26.241	178.8	0.00	14.88	1908.4		
100	14.850	35.290	26.219	178.6	0.00	14.84	1908.2		
125	13.450	35.100	26.380	187.6	0.00	13.43	1904.8		
150	12.890	35.170	26.587	189.0	0.00	12.88	1903.2		
175	10.580	34.880	26.786	193.3	0.00	10.54	1897.2		
200	9.830	34.780	26.809	193.1	0.00	9.78	1896.9		
ISL	0	14.85	35.30	26.217	177.2	0.00	14.86	1907.3	0.000
ISL	10	14.86	35.31	26.230	177.3	0.00	14.86	1907.5	0.018
ISL	25	14.87	35.31	26.240	177.6	0.00	14.87	1907.8	0.044
ISL	50	14.87	35.31	26.240	178.4	0.00	14.86	1908.2	0.088
ISL	75	14.83	35.30	26.244	178.8	0.00	14.81	1908.4	0.133
ISL	100	14.84	35.27	26.277	178.3	0.00	14.53	1908.0	0.178
ISL	125	13.46	35.11	26.389	185.0	0.00	13.27	1904.8	0.264
ISL	150	12.55	36.13	26.598	187.8	0.00	12.52	1902.8	0.342
ISL	175	11.35	34.98	26.753	196.8	0.00	11.32	1898.3	0.414
ISL	200	10.50	34.88	26.772	193.1	0.00	10.48	1897.0	0.482

STATION 6 DATE= 28/04/83									
43.468 148.026 TIME= 1546 GMT									
RANGE 30/82 DEPTH= 1550									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OC	POT.TEMP	S.S	Dyn. #
#	°C	Ppt	°C	°C	°C	°C	°C	°C	
0	14.120	35.230	26.348	187.4	0.00	14.12	1904.9		
25	14.140	35.240	26.344	187.7	0.00	14.14	1905.2		
50	14.140	35.240	26.358	187.0	0.00	14.13	1905.8		
75	13.780	35.200	26.387	185.0	0.00	13.78	1904.9		
100	13.020	35.120	26.463	186.3	0.00	13.01	1902.7		
125	12.590	35.120	26.578	186.8	0.00	12.53	1901.9		
150	11.520	35.040	26.711	196.8	0.00	11.50	1898.1		
175	10.440	34.880	26.782	191.9	0.00	10.40	1896.8		
200	9.430	34.730	26.837	192.6	0.00	9.38	1893.1		
225	8.620	34.800	26.965	197.2	0.00	8.58	1883.2		
250	7.740	34.590	26.991	197.0	0.00	7.67	1882.3		
275	6.530	34.490	27.061	198.0	0.00	6.45	1880.2		
300	5.130	34.430	27.224	194.8	0.00	5.05	1887.2		
325	4.030	34.480	27.368	190.3	0.00	3.94	1886.7		
ISL	0	14.12	35.23	26.340	187.4	0.00	14.12	1904.9	0.000
ISL	10	14.13	35.23	26.340	187.6	0.00	14.13	1905.1	0.017
ISL	25	14.14	35.24	26.344	187.7	0.00	14.14	1905.4	0.042
ISL	50	14.13	35.28	26.380	188.0	0.00	14.13	1905.8	0.084
ISL	75	13.72	35.19	26.395	184.2	0.00	13.70	1904.7	0.129
ISL	100	13.01	35.12	26.486	186.2	0.00	13.00	1902.7	0.165
ISL	125	12.45	35.11	26.588	187.8	0.00	12.43	1901.8	0.211
ISL	150	11.46	35.03	26.718	196.8	0.00	11.44	1898.0	0.242
ISL	175	10.41	34.95	26.751	194.1	0.00	10.40	1897.7	0.280
ISL	200	10.10	34.83	26.801	190.1	0.00	10.08	1895.4	0.344
ISL	225	9.13	34.68	26.848	194.9	0.00	9.10	1893.2	0.373
ISL	250	8.72	34.61	26.882	197.2	0.00	8.67	1893.3	0.400
ISL	275	8.28	34.59	26.936	191.7	0.00	8.14	1893.1	0.429
ISL	300	8.77	34.50	27.080	191.0	0.00	8.70	1890.7	0.503
ISL	325	5.08	34.45	27.230	194.2	0.00	4.99	1887.1	0.543

STATION 7 DATE= 29/04/83									
44.113 148.386 TIME= 0047 GMT									
RANGE 30/82 DEPTH= 3850									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OC	POT.TEMP	S.S	Dyn. #
#	°C	Ppt	°C	°C	°C	°C	°C	°C	
0	15.250	35.190	26.250	184.4	0.00	15.25	1909.2		
25	15.300	35.580	26.333	184.4	0.00	15.30	1909.2		
50	15.290	35.580	26.354	186.0	0.00	15.29	1909.9		
75	15.300	35.580	26.333	187.8	0.00	15.29	1910.0		
100	15.300	35.580	26.353	188.5	0.00	15.29	1910.3		
125	11.990	34.980	26.541	191.1	0.00	11.97	1900.4		
150	6.750	34.610	26.653	192.8	0.00	6.70	1882.4		
175	8.700	34.440	27.035	193.1	0.00	8.62	1880.2		
200	9.750	34.780	27.164	190.5	0.00	9.18	1887.3		
225	4.190	34.420	27.308	196.3	0.00	4.07	1886.1		
250	3.470	34.500	27.447	192.8	0.00	3.32	1886.2		
ISL	0	15.25	35.58	26.250	184.4	0.00	15.25	1909.2	0.000
ISL	10	15.30	35.58	26.333	184.4	0.00	15.30	1909.2	0.017
ISL	25	15.29	35.58	26.353	186.0	0.00	15.29	1909.9	0.042
ISL	50	15.30	35.58	26.333	187.8	0.00	15.29	1910.0	0.088
ISL	75	15.30	35.58	26.353	188.5	0.00	15.29	1910.3	0.133
ISL	100	11.50	35.42	26.602	184.4	0.00	11.48	1907.8	0.178
ISL	125	12.84	35.12	26.498	186.2	0.00	12.82	1903.2	0.217
ISL	150	11.75	34.83	26.582	188.2	0.00	11.73	1899.8	0.254
ISL	175	11.00	34.86	26.608	183.8	0.00	10.97	1897.8	0.287
ISL	200	10.11	34.77	26.712	190.4	0.00	10.27	1896.1	0.409
ISL	225	9.10	34.65	26.821	192.3	0.00	9.04	1893.2	0.484
ISL	250	8.46	34.58	26.879	192.3	0.00	8.40	1892.4	0.530
ISL	275	7.84	34.54	26.825	192.4	0.00	7.80	1893.0	0.553
ISL	300	6.84	34.48	27.078	192.8	0.00	6.80	1890.1	0.606
ISL	325	5.08	34.38	27.183	194.8	0.00	4.98	1887.1	0.790
ISL	350	3.36	34.47	27.406	198.3	0.00	3.46	1886.2	1.540

STATION 8 DATE= 28/04/83									
45.098 149.136 TIME= 2122 GMT									
RANGE 30/82 DEPTH= 4200									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OC	POT.TEMP	S.S	Dyn. #
#	°C	Ppt	°C	°C	°C	°C	°C	°C	
0	15.340	35.508	26.278	173.2	0.00	15.34	1909.1		
25	15.350	35.500	26.281	173.6	0.00	15.35	1909.4		
50	15.350	35.510	26.286	173.5	0.00	15.34	1909.8		
75	15.300	36.480	26.284	174.3	0.00	15.29	1909.9		
100	14.340	35.340	26.338	170.2	0.00	14.33	1907.7		
125	12.850	35.150	26.528	183.6	0.00	12.83	1902.8		
150	11.830	35.000	26.603	185.5	0.00	11.83	1899.8		
175	10.700	34.820	26.786	192.8	0.00	10.67	1897.1		
200	9.990	34.770	26.843	194.8	0.00	9.95	1894.2		
225	6.790	34.510	27.062	198.3	0.00	6.73	1887.9		
250	5.290	34.410	27.178	197.0	0.00	5.18	1884.2		
275	4.430	34.480	27.327	193.3	0.00	4.36	1883.8		
300	3.300	34.480	27.442	191.3	0.00	3.22	1882.3		
ISL	0	15.36	35.50	26.278	173.2	0.00	15.36	1909.1	0.000
ISL	10	15.35	35.50	26.278	173.6	0.00	15.35	1909.3	0.017
ISL	25	15.35	35.51	26.284	173.6	0.00	15.35	1909.8	0.043
ISL	50	15.33	36.50	26.286	173.5	0.00	15.32	1909.9	0.087
ISL	75	14.77	35.38	26.317	171.8	0.00	14.76	1906.4	0.130
ISL	100	13.73	35.23	26.436	181.3	0.00	13.71	1905.2	0.172
ISL	125	12.26	36.04	26.578	188.9	0.00	12.23	1900.8	0.218
ISL	150	11.51	34.99	26.671	184.8	0.00	11.50	1899.1	0.252
ISL	175	10.81	34.94	26.750	194.2	0.00	10.80	1897.6	0.281
ISL	200	10.12	34.84	26.808	192.8	0.00	10.09	1895.8	0.357
ISL	225	9.18	34.71	26.866	192.5	0.00	9.14	1893.6	0.383
ISL	250	8.28	34.62	26.834	192.0	0.00	8.22	1891.7	0.406
ISL	275	7.18	34.53	27.038	191.7	0.00	7.04	1888.7	0.522
ISL	300	5.18	34.42	27.195	195.3	0.00	5.11	1884.2	0.628
ISL	325	4.20	34.48	27.358	190.4	0.00	4.13	1882.6	0.703





STATION 9 45.508 140.486 RANGE 30/82  
DATE= 28/04/83 TIME= 1952 GMT DEPTH= 4700

DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT. TEMP	S.S	Dyn. a
m	°C	Ppt	kg/m <sup>3</sup>	kg/L	°C	°C	kg/m <sup>3</sup>	
0	10.746	34.540	26.440	154.1	0.00	10.74	1492.3	
21	10.750	34.570	26.446	154.0	0.00	10.75	1492.9	
43	11.170	34.640	26.496	153.8	0.00	11.16	1494.8	
130	11.340	34.740	26.511	154.2	0.00	11.32	1497.0	
150	10.74	34.54	26.440	154.1	0.00	10.74	1492.3	0.000
151	10.74	34.54	26.442	154.1	0.00	10.74	1492.9	-0.15
152	10.84	34.59	26.466	153.9	0.00	10.83	1493.3	-0.30
153	11.27	34.71	26.496	153.8	0.00	11.27	1496.4	-0.77
154	11.23	34.78	26.506	153.8	0.00	11.22	1496.7	-1.13
155	11.28	34.72	26.510	154.0	0.00	11.27	1496.3	-1.54

STATION 10 46.248 150.296 RANGE 30/82  
DATE= 28/04/83 TIME= 1818 LOCAL DEPTH= 4600

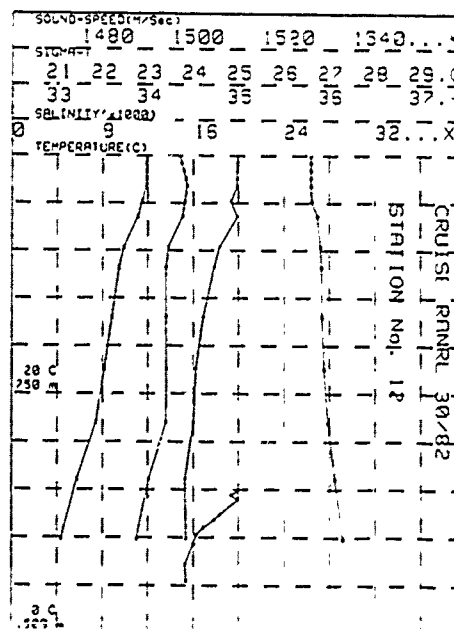
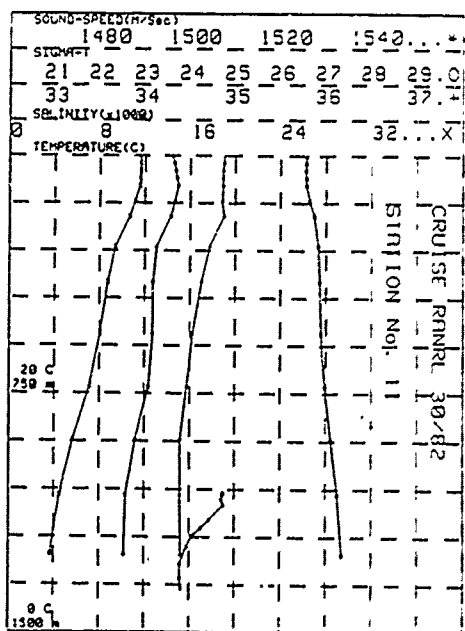
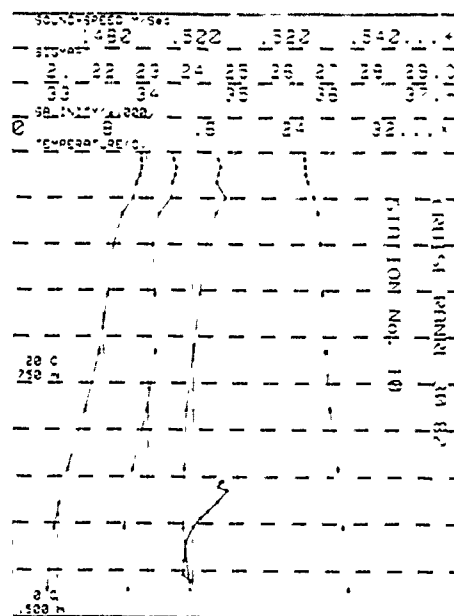
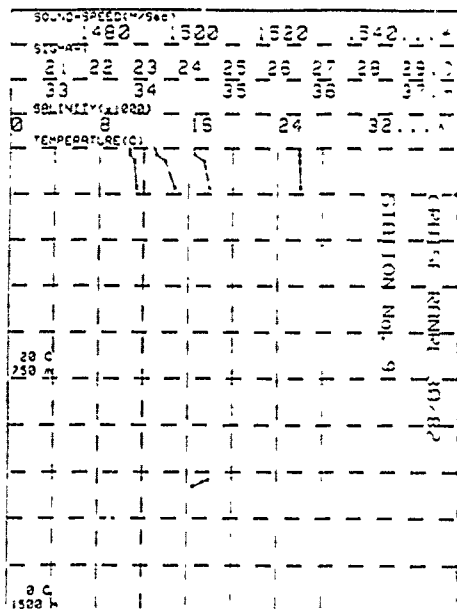
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT. TEMP	S.S	Dyn. a
m	°C	Ppt	kg/m <sup>3</sup>	kg/L	°C	°C	kg/m <sup>3</sup>	
0	11.530	34.800	26.523	150.0	0.00	11.53	1495.6	
25	11.530	34.800	26.523	150.0	0.00	11.53	1496.0	
50	11.570	34.830	26.539	149.7	0.00	11.56	1496.6	
75	11.566	34.800	26.546	149.3	0.00	11.56	1496.3	
100	11.098	34.780	26.509	148.1	0.00	11.08	1495.7	
150	10.780	34.880	26.729	134.2	0.00	10.74	1495.4	
201	8.788	34.770	26.610	127.0	0.00	8.78	1492.6	
201	8.965	34.680	26.654	124.5	0.00	8.96	1491.2	
443	8.398	34.588	26.605	124.1	0.00	8.34	1491.3	
640	7.620	34.500	26.637	121.3	0.00	7.59	1491.3	
838	6.378	34.420	27.047	112.0	0.00	6.29	1486.6	
1028	4.640	34.400	27.218	99.1	0.00	4.75	1484.9	
1214	3.840	34.390	27.337	82.3	0.00	3.55	1484.7	
1412	3.080	34.470	27.457	71.0	0.00	2.96	1483.6	
151	11.53	34.80	26.523	150.0	0.00	11.53	1495.6	0.000
152	11.53	34.80	26.523	150.3	0.00	11.53	1495.7	0.13
153	11.53	34.80	26.523	150.6	0.00	11.53	1496.0	0.36
154	11.57	34.83	26.539	149.7	0.00	11.56	1496.6	0.75
155	11.56	34.80	26.546	149.3	0.00	11.56	1496.3	1.13
156	11.08	34.78	26.509	148.1	0.00	11.08	1495.7	1.49
157	10.78	34.88	26.729	134.2	0.00	10.74	1495.4	2.20
158	8.80	34.77	26.609	127.1	0.00	8.77	1492.6	2.85
159	8.96	34.68	26.654	124.5	0.00	8.96	1491.2	3.48
160	9.00	34.64	26.653	124.3	0.00	8.96	1491.2	4.11
161	8.43	34.61	26.671	124.4	0.00	8.39	1491.4	4.35
162	8.78	34.58	26.691	123.8	0.00	8.22	1491.5	4.59
163	7.67	34.52	26.618	122.2	0.00	7.61	1491.5	7.82
164	6.65	34.43	27.020	114.3	0.00	6.37	1490.1	1.019
165	5.03	34.40	27.197	87.1	0.00	4.95	1486.9	1.232
166	3.30	34.41	27.380	77.3	0.00	3.21	1484.7	1.483

STATION 11 47.018 151.32E RANGE 30/82  
DATE= 30/04/83 TIME= 1540 GMT DEPTH= 4600

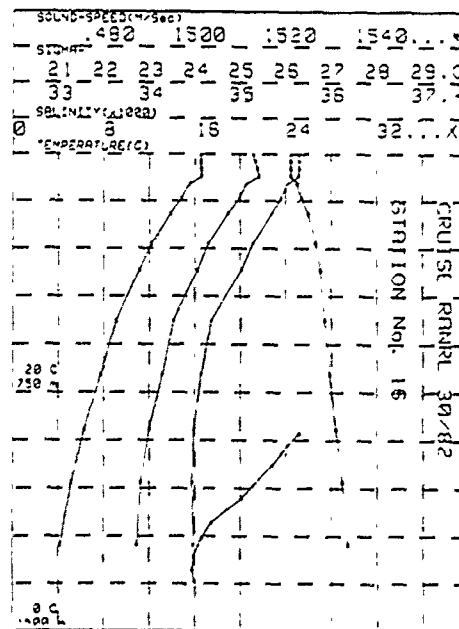
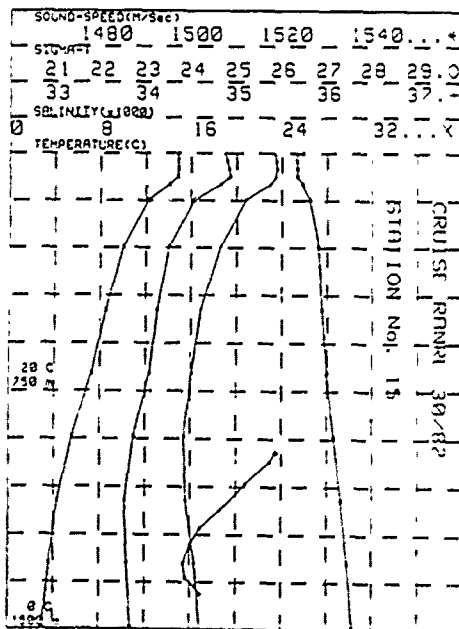
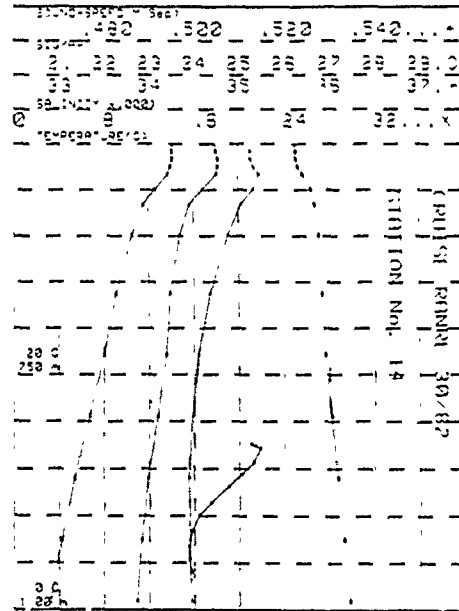
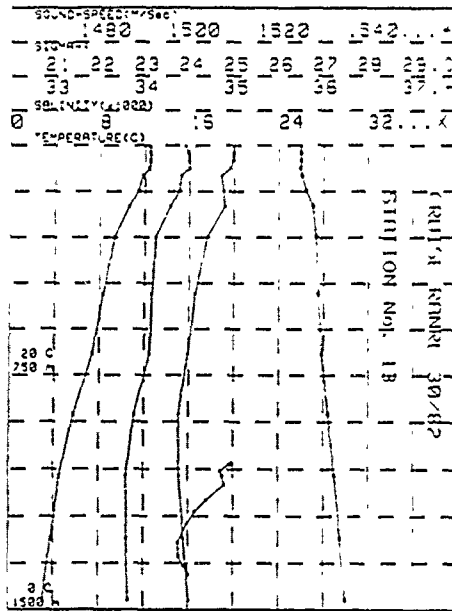
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT. TEMP	S.S	Dyn. a
m	°C	Ppt	kg/m <sup>3</sup>	kg/L	°C	°C	kg/m <sup>3</sup>	
0	11.630	34.880	26.546	149.0	0.00	11.63	1496.0	
24	11.670	34.880	26.558	147.2	0.00	11.67	1496.6	
48	11.660	34.878	26.555	146.2	0.00	11.64	1496.9	
72	11.610	34.878	26.542	146.0	0.00	11.60	1497.1	
96	11.590	34.870	26.544	146.2	0.00	11.58	1497.5	
120	11.196	34.880	26.636	142.5	0.00	11.14	1496.7	
144	10.870	34.880	26.742	133.6	0.00	10.86	1495.6	
168	9.420	34.720	26.831	126.8	0.00	9.38	1492.6	
192	8.730	34.632	26.868	124.6	0.00	8.71	1491.0	
216	8.090	34.530	26.886	124.3	0.00	8.08	1491.6	
240	7.240	34.470	26.962	115.8	0.00	7.07	1490.9	
264	6.730	34.400	27.113	105.4	0.00	6.66	1486.0	
288	4.570	34.400	27.254	91.4	0.00	4.43	1485.9	
312	3.680	34.410	27.348	81.8	0.00	3.58	1486.6	
151	11.63	34.88	26.546	149.0	0.00	11.63	1496.0	0.000
152	11.65	34.88	26.543	146.5	0.00	11.63	1496.3	0.13
153	11.67	34.88	26.558	147.2	0.00	11.67	1496.6	0.37
154	11.66	34.87	26.556	146.1	0.00	11.64	1496.9	0.74
155	11.61	34.87	26.543	146.2	0.00	11.60	1497.2	1.11
156	11.58	34.87	26.571	147.9	0.00	11.54	1497.4	1.48
157	11.10	34.87	26.663	141.2	0.00	11.08	1496.6	2.20
158	10.54	34.88	26.751	133.6	0.00	10.52	1495.4	2.86
159	9.84	34.77	26.822	126.8	0.00	9.81	1492.6	3.54
160	9.34	34.71	26.836	126.4	0.00	9.31	1492.5	4.18
161	8.75	34.63	26.868	124.6	0.00	8.71	1491.0	4.84
162	8.06	34.58	26.878	124.6	0.00	8.30	1491.6	5.60
163	7.60	34.52	26.911	123.5	0.00	7.64	1491.8	7.82
164	6.52	34.43	27.036	115.7	0.00	6.44	1486.0	1.030
165	4.95	34.40	27.204	96.3	0.00	4.86	1486.5	1.236

STATION 12 46.018 151.32E RANGE 30/82  
DATE= 01/05/83 TIME= 1432 GMT DEPTH= 4600

DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT. TEMP	S.S	Dyn. a
m	°C	Ppt	kg/m <sup>3</sup>	kg/L	°C	°C	kg/m <sup>3</sup>	
0	11.918	34.990	26.599	142.8	0.00	11.91	1497.1	
23	11.910	34.980	26.599	143.4	0.00	11.91	1497.3	
48	11.920	34.990	26.597	144.2	0.00	11.91	1496.0	
72	11.920	34.980	26.595	145.0	0.00	11.92	1496.4	
96	11.910	34.980	26.599	145.2	0.00	11.90	1496.7	
120	11.598	34.928	26.613	143.0	0.00	11.53	1496.2	
144	11.150	34.998	26.741	133.8	0.00	11.12	1497.7	
168	9.898	34.798	26.807	129.2	0.00	9.86	1494.5	
192	9.480	34.730	26.829	128.2	0.00	9.44	1494.0	
216	8.638	34.610	26.840	129.6	0.00	8.77	1494.0	
240	8.192	34.530	26.881	127.9	0.00	8.09	1494.0	
264	7.420	34.500	26.966	121.5	0.00	7.33	1493.6	
288	5.778	34.410	27.113	106.7	0.00	5.68	1490.2	
312	4.350	34.430	27.288	86.8	0.00	4.25	1487.3	
151	11.91	34.99	26.599	142.8	0.00	11.91	1497.1	0.000
152	11.91	34.99	26.599	143.0	0.00	11.91	1497.3	0.14
153	11.91	34.98	26.598	143.4	0.00	11.91	1497.0	0.36
154	11.92	34.98	26.597	144.2	0.00	11.92	1496.0	0.72
155	11.93	34.99	26.596	145.0	0.00	11.92	1496.5	1.08
156	11.88	34.98	26.608	145.2	0.00	11.87	1496.7	1.44
157	11.52	34.93	26.629	143.6	0.00	11.50	1496.2	2.17
158	11.03	34.87	26.747	133.4	0.00	11.01	1497.3	2.86
159	10.32	34.86	26.788	130.7	0.00	10.29	1495.4	3.52
160	9.42	34.78	26.811	129.0	0.00	9.39	1494.4	4.17
161	8.78	34.69	26.829	128.3	0.00	8.74	1494.6	4.84
162	8.47	34.62	26.838	129.6	0.00	8.42	1494.0	5.75
163	8.47	34.58	26.856	129.2	0.00	8.40	1494.0	6.04
164	7.66	34.51	26.940	123.8	0.00	7.59	1493.8	1.057
165	5.82	34.41	27.101	108.2	0.00	5.82	1490.5	1.288







**Cruise RANRL 23/83***Notes for cruise RANRL 23/83*

The poor bottle spacings in near surface waters for stations 1 and 2 were caused by a faulty digital wire out meter on the winch, which read less than the actual wire length paid out. Onboard processing of DSRT data allowed repair of the meter for following stations. Bottle spacing for these and several other stations is often too large to properly define the higher gradients of parameters in upper waters.

The density ( $\sigma_t$ ) values for station 2 at 200 m and 247 m are very close but all values seemed good. Density at 686 m in station 6 looks high but no obvious errors in data are seen, although the T-S curve indicates that salinity may be too high. However the T-S point lies in the limits for Banda Sea water shown on a diagram by Rochford (1969). The surface salinity value seems high for station 9, but is left unchanged.

*Other sources of data for cruise 23/83*

Hamilton, L.J. (1985)

"Data Report for RANRL Oceanographic Cruise No. 23/83 (May/June 1983 - East Indian Ocean)".

RANRL Tech. Memo (External) No.7/85

Includes XBT cross-sections, geostrophic current profiles, SST fields, satellite imagery and routine data analysis.

Hamilton, L.J. (1987)

"Oceanographic Features of the East and South-east Indian Ocean for June 1983".

RANRL Tech. Memo (External) No.3/87

Couples drifting buoy, satellite, and data from eight other vessels for a quasi-synoptic description of surface currents and temperature fields. Briefly evaluates usefulness of satellite infra-red imagery for the area.

Scott, B.D. (1983)

"RAN Research Laboratory Oceanographic Cruise Report".

Cook Oceanographic Cruise No.1. RANRL 23/83 (Unpublished document).

A narrative of the actual cruise.

Dr. Stella Humphries

Took nutrient samples and Secchi dish measurements at Nansen station sites, but results are unknown.

Dr. J. Veevers of Macquarie University

Published papers relating to magnetometer and seismic profiling measurements made during the cruise.

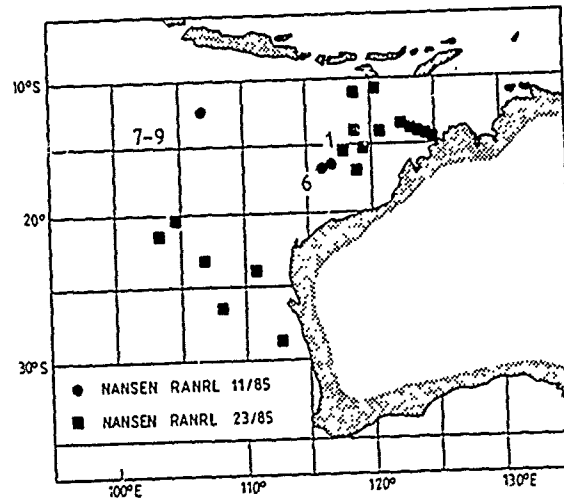


Figure 4. Nansen station positions for cruise RANRL 23/83

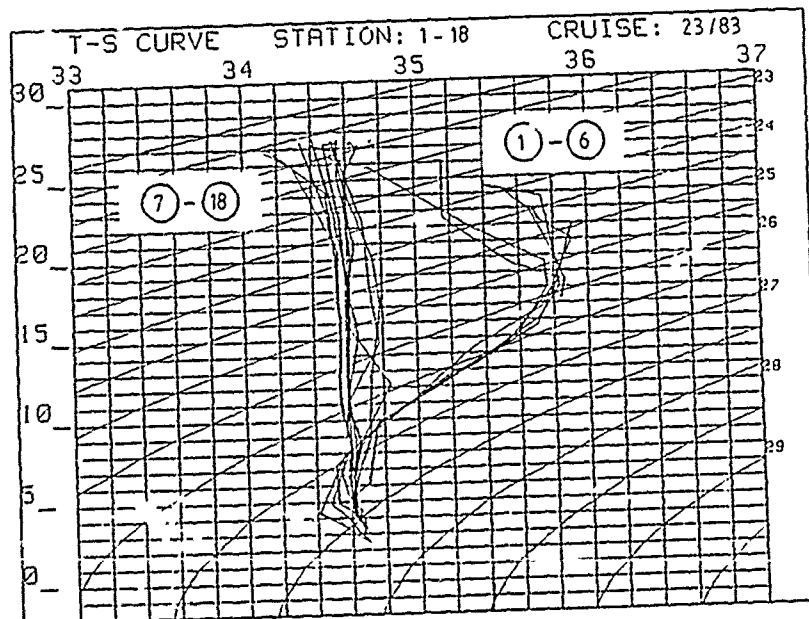


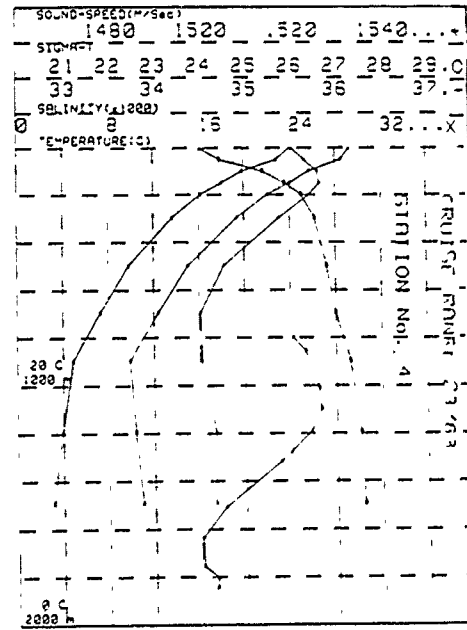
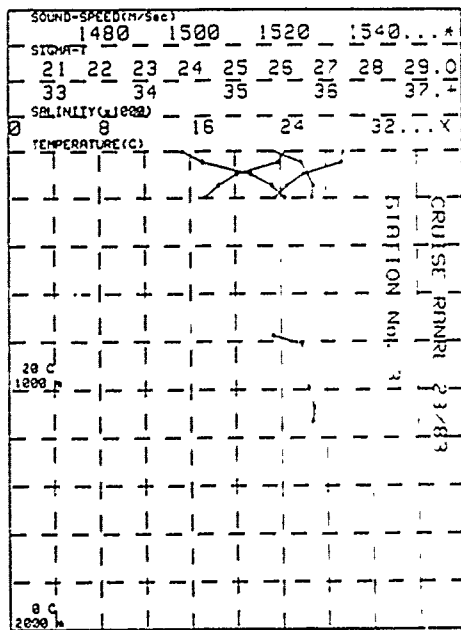
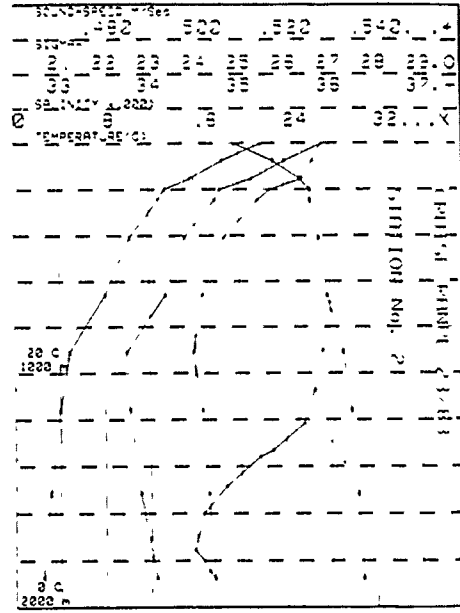
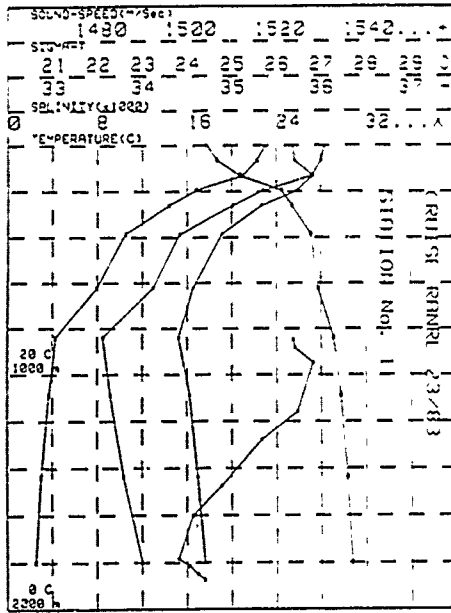
Figure 5. Temperature-salinity curves for survey RANRL 23/83

STATION 1 DATE= 24/05/1983									
TIME= 1350GMT									
RAWPL 23/83									
DEPTH= 9999									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S		
m	°C	Ppt	CL/T	ML/L	°C	R/Sec	Dyn #		
088	0	23.040	35.687	24.445	347.8	0.00	23.04	1530.9	0.000
088	65	23.000	35.709	24.473	329.3	0.00	22.29	1530.1	
088	131	21.020	35.911	25.184	282.1	0.00	20.99	1578.1	
088	196	18.810	35.733	24.123	194.3	0.00	16.78	1517.1	
088	262	14.430	35.339	24.355	173.5	0.00	14.38	1510.3	
088	368	10.310	34.961	24.779	134.4	0.00	10.44	1496.4	
088	622	7.970	34.560	24.838	121.4	0.00	7.91	1492.5	
088	840	4.320	34.410	27.283	86.0	0.00	4.25	1481.3	
088	1048	3.700	34.329	27.442	71.9	0.00	3.62	1483.8	
088	1417	2.990	34.620	27.583	59.3	0.00	2.88	1485.9	
088	1800	2.500	34.900	27.669	49.8	0.00	2.37	1490.1	
ISL	0	23.04	35.68	24.445	347.8	0.00	23.04	1530.9	0.000
ISL	10	22.98	35.68	24.442	346.4	0.00	22.94	1530.8	.035
ISL	25	22.82	35.70	24.501	343.3	0.00	22.61	1530.7	.086
ISL	50	22.52	35.70	24.597	335.1	0.00	22.31	1530.4	.170
ISL	75	22.31	35.78	24.722	324.1	0.00	22.28	1529.8	.252
ISL	100	21.82	35.86	24.868	309.2	0.00	21.98	1529.0	.330
ISL	150	19.80	35.88	25.531	249.5	0.00	19.57	1524.4	.472
ISL	200	16.68	35.71	26.137	183.0	0.00	16.43	1518.7	.584
ISL	250	14.85	35.40	26.513	177.3	0.00	14.61	1511.8	.678
ISL	300	13.04	35.18	26.510	159.1	0.00	13.00	1504.0	.761
ISL	400	10.40	34.87	26.782	134.3	0.00	10.38	1498.2	.907
ISL	500	8.47	34.71	26.828	121.4	0.00	8.41	1494.3	1.038
ISL	600	6.27	34.59	26.613	123.7	0.00	6.21	1485.3	1.163
ISL	800	4.77	34.42	27.234	90.9	0.00	4.71	1482.4	1.388
ISL	1000	3.81	34.49	27.381	78.4	0.00	3.83	1482.3	1.544
ISL	1300	3.24	34.29	27.532	65.8	0.00	3.15	1484.8	1.758
ISL	1500	2.89	34.83	27.604	57.4	0.00	2.78	1486.6	1.878

STATION 2 DATE= 23/05/83									
TIME= 2225GMT									
RAWPL 23/83									
DEPTH= 9999									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S		
m	°C	Ppt	CL/T	ML/L	°C	R/Sec	Dyn #		
088	0	21.990	35.913	24.918	302.8	0.00	21.99	1526.9	
088	74	18.520	35.821	25.773	223.9	0.00	18.53	1520.2	
088	153	15.880	35.701	26.341	170.1	0.00	15.66	1512.9	
088	200	13.400	35.331	26.544	149.7	0.00	13.37	1505.9	
088	247	12.858	35.211	26.587	150.4	0.00	12.82	1504.7	
088	409	10.210	34.837	26.772	133.4	0.00	10.28	1496.9	
088	662	8.040	34.595	26.838	122.1	0.00	7.99	1493.9	
088	910	4.880	34.478	27.275	86.8	0.00	4.81	1484.9	
088	1159	4.018	34.378	27.430	72.6	0.00	3.92	1485.3	
088	1516	3.110	34.641	27.568	59.7	0.00	3.00	1487.8	
088	1874	2.480	34.703	27.684	49.6	0.00	2.34	1491.2	
ISL	0	21.99	35.91	24.918	302.8	0.00	21.99	1526.9	0.000
ISL	10	21.90	35.90	25.044	290.9	0.00	21.49	1527.3	.030
ISL	25	20.78	35.88	25.228	274.0	0.00	20.77	1525.4	.072
ISL	50	19.43	35.86	25.510	248.0	0.00	19.42	1522.9	.138
ISL	75	18.54	35.82	25.763	226.8	0.00	18.53	1520.3	.188
ISL	100	17.73	35.78	25.989	204.9	0.00	17.74	1518.5	.259
ISL	150	15.81	35.71	26.343	171.7	0.00	15.79	1513.3	.347
ISL	200	13.40	35.33	26.544	149.7	0.00	13.37	1505.9	.427
ISL	250	12.80	35.20	26.591	150.1	0.00	12.78	1504.3	.502
ISL	300	11.92	35.07	26.644	144.9	0.00	11.88	1502.2	.578
ISL	400	10.43	34.85	26.783	136.1	0.00	10.38	1498.3	.717
ISL	500	8.42	34.73	26.812	123.0	0.00	8.58	1496.9	.850
ISL	600	6.79	34.63	26.882	127.3	0.00	6.84	1495.0	.978
ISL	800	5.01	34.50	27.146	101.5	0.00	5.94	1487.6	1.210
ISL	1000	4.55	34.52	27.346	82.2	0.00	4.47	1485.0	1.293
ISL	1300	3.82	34.80	27.509	67.2	0.00	3.52	1486.3	1.616
ISL	1500	3.14	34.84	27.583	60.2	0.00	3.03	1487.7	1.743

STATION 3 DATE= 28/05/83									
TIME= 0222GMT									
RAWPL 23/83									
DEPTH= 4250									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S		
m	°C	Ppt	CL/T	ML/L	°C	R/Sec	Dyn #		
088	0	24.430	35.409	23.624	408.8	0.00	24.43	1533.9	
088	50	23.740	35.732	24.274	369.8	0.00	23.73	1533.5	
088	100	20.129	35.722	23.343	296.7	0.00	20.18	1529.0	
088	150	18.490	35.963	25.812	222.7	0.00	18.48	1523.4	
088	200	17.210	35.845	26.088	187.8	0.00	17.28	1518.6	
ISL	0	24.43	35.41	23.624	408.8	0.00	24.43	1533.9	0.000
ISL	10	24.29	35.49	23.864	403.3	0.00	24.29	1533.8	.040
ISL	25	24.09	35.80	23.872	393.7	0.00	24.08	1533.7	.099
ISL	50	23.74	35.73	24.274	363.8	0.00	23.73	1533.5	.193
ISL	75	21.68	35.77	24.684	308.8	0.00	21.67	1528.7	.279
ISL	100	20.12	35.80	25.543	248.7	0.00	20.18	1523.0	.351
ISL	150	18.49	35.96	25.812	222.7	0.00	18.48	1521.4	.473
ISL	200	17.31	35.84	26.088	187.8	0.00	17.28	1518.6	.576

STATION 4 DATE= 29/05/83									
TIME= 0323GMT									
RAWPL 23/83									
DEPTH= 5410									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S		
m	°C	Ppt	CL/T	ML/L	°C	R/Sec	Dyn #		
088	0	24.030	35.537	24.033	368.9	0.00	24.03	1533.1	
088	50	22.880	35.653	24.474	346.7	0.00	22.87	1531.3	
088	99	19.880	35.810	25.418	254.5	0.00	19.84	1524.3	
088	150	18.030	35.632	25.886	214.4	0.00	18.02	1520.1	
088	198	16.140	35.720	26.291	181.2	0.00	16.13	1515.2	
088	298	13.050	35.381	26.556	155.2	0.00	13.01	1506.4	
088	498	9.820	34.774	26.806	133.3	0.00	9.78	1497.8	
088	698	7.280	34.514	26.996	116.2	0.00	7.22	1491.0	
088	898	4.900	34.254	27.310	85.3	0.00	4.83	1484.8	
088	1194	3.540	34.878	27.533	64.9	0.00	3.65	1485.9	
088	1453	3.118	34.846	27.610	57.6	0.00	3.00	1487.4	
ISL	0	24.03	35.53	24.033	368.9	0.00	24.03	1533.1	0.000
ISL	2	23.96	35.53	24.079	362.9	0.00	23.95	1532.7	.036
ISL	2	23.79	35.59	24.188	373.1	0.00	23.80	1532.2	.064
ISL	50	22.88	35.67	24.474	346.7	0.00	22.87	1531.3	.183
ISL	75	21.18	35.75	25.013	296.1	0.00	21.17	1527.4	.264
ISL	100	19.83	35.81	25.429	257.6	0.00	19.81	1524.3	.334
ISL	150	18.05	35.63	25.886	214.4	0.00	18.02	1520.1	.432
ISL	200	16.15	35.72	26.293	180.8	0.00	16.12	1515.1	.551
ISL	250	14.82	35.84	26.427	166.8	0.00	14.79	1511.6	.638
ISL	300	13.81	35.37	26.558	154.9	0.00	13.54	1508.3	.718
ISL	400	11.54	35.03	26.881	143.6	0.00	11.42	1502.4	.866
ISL	500	9.79	34.77	26.806	133.4	0.00	9.74	1497.9	1.007
ISL	600	8.06	34.61	26.998	125.3	0.00	8.43	1494.2	1.136
ISL	800	5.87	34.52	27.175	94.4	0.00	5.80	1487.0	1.344
ISL	1000	4.55	34.80	27.405	78.7	0.00	4.47	1485.1	1.536
ISL	1300	3.83	34.87	27.579	60.8	0.00	3.53	1486.4	1.744



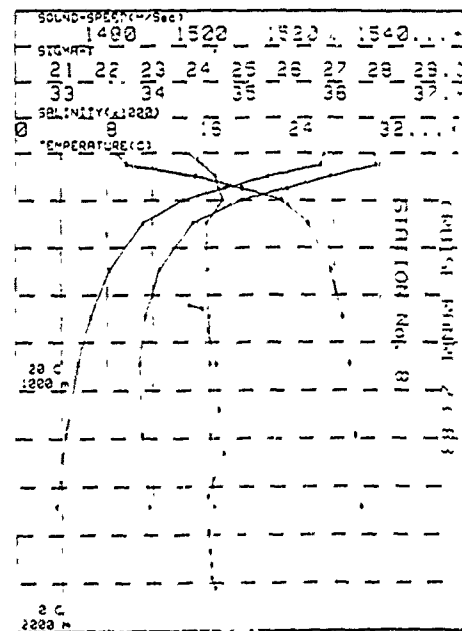
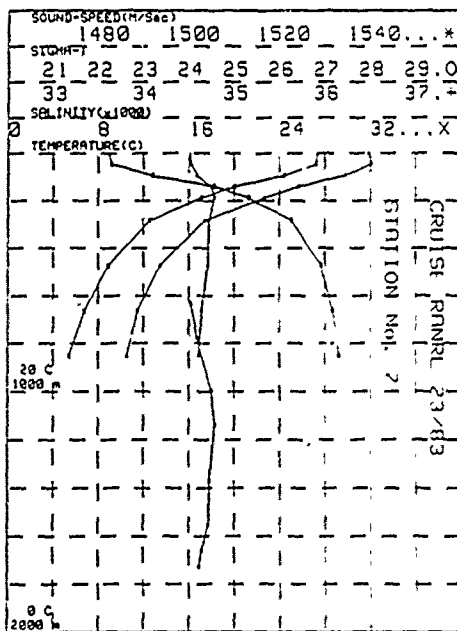
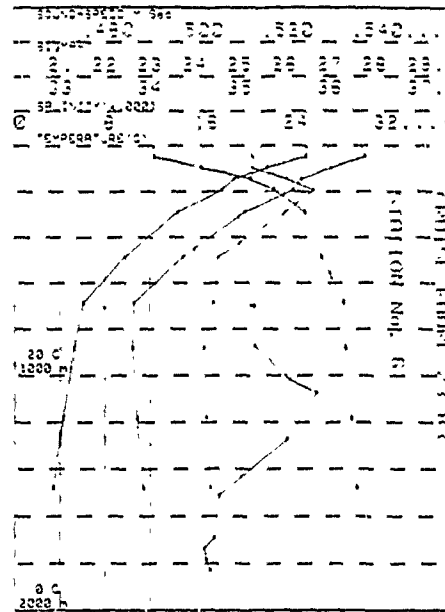
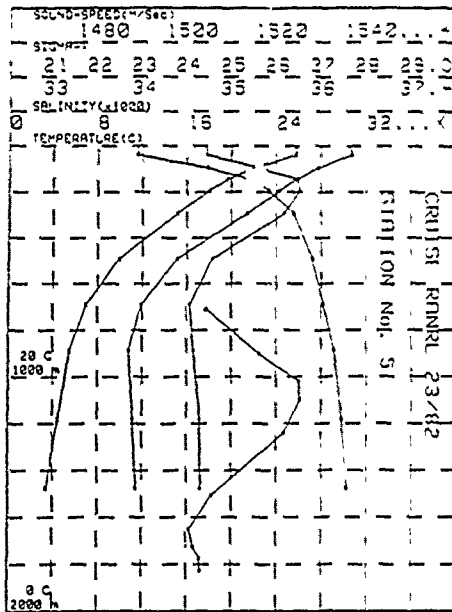


STATION 5 DATE= 30/03/83										20.225 104.35E TIME= 180000T										RAWEL 23/83 DEPTH= 4480									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S
0	23.750	34.713	22.894	495.4	0.00	25.73	1536.3	0.000	0.000	0	23.750	34.713	22.894	495.4	0.00	25.73	1536.3	0.000	0.000	0	23.750	34.713	22.894	495.4	0.00	25.73	1536.3	0.000	0.000
10	23.780	34.727	22.895	497.1	0.00	25.78	1537.0	0.000	0.000	10	23.780	34.727	22.895	497.1	0.00	25.78	1537.0	0.000	0.000	10	23.780	34.727	22.895	497.1	0.00	25.78	1537.0	0.000	0.000
20	23.950	35.332	24.470	548.8	0.00	21.83	1529.3	0.000	0.000	20	23.950	35.332	24.470	548.8	0.00	21.83	1529.3	0.000	0.000	20	23.950	35.332	24.470	548.8	0.00	21.83	1529.3	0.000	0.000
30	19.630	35.743	23.429	299.1	0.00	19.00	1524.4	0.000	0.000	30	19.630	35.743	23.429	299.1	0.00	19.00	1524.4	0.000	0.000	30	19.630	35.743	23.429	299.1	0.00	19.00	1524.4	0.000	0.000
40	18.040	35.761	23.444	220.8	0.00	18.01	1520.7	0.000	0.000	40	18.040	35.761	23.444	220.8	0.00	18.01	1520.7	0.000	0.000	40	18.040	35.761	23.444	220.8	0.00	18.01	1520.7	0.000	0.000
50	15.170	35.586	26.388	171.8	0.00	15.12	1513.3	0.000	0.000	50	15.170	35.586	26.388	171.8	0.00	15.12	1513.3	0.000	0.000	50	15.170	35.586	26.388	171.8	0.00	15.12	1513.3	0.000	0.000
60	9.910	34.785	28.800	134.1	0.00	9.88	1487.9	0.000	0.000	60	9.910	34.785	28.800	134.1	0.00	9.88	1487.9	0.000	0.000	60	9.910	34.785	28.800	134.1	0.00	9.88	1487.9	0.000	0.000
70	7.020	34.538	27.052	110.4	0.00	6.99	1480.9	0.000	0.000	70	7.020	34.538	27.052	110.4	0.00	6.99	1480.9	0.000	0.000	70	7.020	34.538	27.052	110.4	0.00	6.99	1480.9	0.000	0.000
80	5.470	34.577	27.294	86.7	0.00	5.39	1487.0	0.000	0.000	80	5.470	34.577	27.294	86.7	0.00	5.39	1487.0	0.000	0.000	80	5.470	34.577	27.294	86.7	0.00	5.39	1487.0	0.000	0.000
90	4.480	34.850	27.487	73.5	0.00	4.38	1486.0	0.000	0.000	90	4.480	34.850	27.487	73.5	0.00	4.38	1486.0	0.000	0.000	90	4.480	34.850	27.487	73.5	0.00	4.38	1486.0	0.000	0.000
100	3.470	34.858	27.568	62.7	0.00	3.38	1486.7	0.000	0.000	100	3.470	34.858	27.568	62.7	0.00	3.38	1486.7	0.000	0.000	100	3.470	34.858	27.568	62.7	0.00	3.38	1486.7	0.000	0.000

STATION 6 DATE= 01/04/83										24.025 110.47E TIME= 061000T										RAWEL 23/83 DEPTH= 2970									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S
0	26.060	35.123	23.109	475.1	0.00	26.06	1537.4	0.000	0.000	0	26.060	35.123	23.109	475.1	0.00	26.06	1537.4	0.000	0.000	0	26.060	35.123	23.109	475.1	0.00	26.06	1537.4	0.000	0.000
10	26.050	35.182	23.142	475.9	0.00	26.04	1536.2	0.000	0.000	10	26.050	35.182	23.142	475.9	0.00	26.04	1536.2	0.000	0.000	10	26.050	35.182	23.142	475.9	0.00	26.04	1536.2	0.000	0.000
20	22.638	35.188	24.190	375.8	0.00	22.51	1520.8	0.000	0.000	20	22.638	35.188	24.190	375.8	0.00	22.51	1520.8	0.000	0.000	20	22.638	35.188	24.190	375.8	0.00	22.51	1520.8	0.000	0.000
30	19.700	35.342	25.282	273.1	0.00	19.57	1524.1	0.000	0.000	30	19.700	35.342	25.282	273.1	0.00	19.57	1524.1	0.000	0.000	30	19.700	35.342	25.282	273.1	0.00	19.57	1524.1	0.000	0.000
40	16.500	35.435	25.788	226.5	0.00	16.47	1522.1	0.000	0.000	40	16.500	35.435	25.788	226.5	0.00	16.47	1522.1	0.000	0.000	40	16.500	35.435	25.788	226.5	0.00	16.47	1522.1	0.000	0.000
50	14.219	35.513	26.475	183.0	0.00	14.17	1511.2	0.000	0.000	50	14.219	35.513	26.475	183.0	0.00	14.17	1511.2	0.000	0.000	50	14.219	35.513	26.475	183.0	0.00	14.17	1511.2	0.000	0.000
60	9.779	34.797	28.902	133.7	0.00	9.71	1497.2	0.000	0.000	60	9.779	34.797	28.902	133.7	0.00	9.71	1497.2	0.000	0.000	60	9.779	34.797	28.902	133.7	0.00	9.71	1497.2	0.000	0.000
70	6.140	34.704	27.301	85.8	0.00	6.08	1486.5	0.000	0.000	70	6.140	34.704	27.301	85.8	0.00	6.08	1486.5	0.000	0.000	70	6.140	34.704	27.301	85.8	0.00	6.08	1486.5	0.000	0.000
80	5.280	34.753	27.322	84.7	0.00	5.18	1486.1	0.000	0.000	80	5.280	34.753	27.322	84.7	0.00	5.18	1486.1	0.000	0.000	80	5.280	34.753	27.322	84.7	0.00	5.18	1486.1	0.000	0.000
90	4.300	34.820	27.432	73.4	0.00	4.21	1487.2	0.000	0.000	90	4.300	34.820	27.432	73.4	0.00	4.21	1487.2	0.000	0.000	90	4.300	34.820	27.432	73.4	0.00	4.21	1487.2	0.000	0.000
100	3.430	34.864	27.578	61.7	0.00	3.32	1486.8	0.000	0.000	100	3.430	34.864	27.578	61.7	0.00	3.32	1486.8	0.000	0.000	100	3.430	34.864	27.578	61.7	0.00	3.32	1486.8	0.000	0.000

STATION 7 DATE= 07/04/83										18.47E 118.50E TIME= 153700T										RAWEL 23/83 DEPTH= 1644									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S
0	27.380	34.517	22.234	554.7	0.00	27.38	1536.7	0.000	0.000	0	27.380	34.517	22.234	554.7	0.00	27.38	1536.7	0.000	0.000	0	27.380	34.517	22.234	554.7	0.00	27.38	1536.7	0.000	0.000
10	27.220	34.528	22.294	554.9	0.00	27.21	1540.2	0.000	0.000	10	27.220	34.528	22.294	554.9	0.00	27.21	1540.2	0.000	0.000	10	27.220	34.528	22.294	554.9	0.00	27.21	1540.2	0.000	0.000
20	24.618	34.950	23.211	486.0	0.00	24.59	1534.5	0.000	0.000	20	24.618	34.950	23.211	486.0	0.00	24.59	1534.5	0.000	0.000	20	24.618	34.950	23.211	486.0	0.00	24.59	1534.5	0.000	0.000
30	20.018	34.748	24.338	340.7	0.00	19.98	1524.2	0.000	0.000	30	20.018	34.748	24.338	340.7	0.00	19.98	1524.2	0.000	0.000	30	20.018	34.748	24.338	340.7	0.00	19.98	1524.2	0.000	0.000
40	17.110	34.780	25.327	288.6	0.00	17.08	1518.7	0.000	0.000	40	17.110	34.780	25.327	288.6	0.00	17.08	1518.7	0.000	0.000	40	17.110	34.780	25.327	288.6	0.00	17.08	1518.7	0.000	0.000
50	12.580	34.728	26.270	181.2	0.00	12.52	1503.7	0.000	0.000	50	12.580	34.728	26.270	181.2	0.00	12.52	1503.7	0.000	0.000	50	12.580	34.728	26.270	181.2	0.00	12.52	1503.7	0.000	0.000
60	8.870	34.714	26.913	121.9	0.00	8.82	1483.8	0.000	0.000	60	8.870	34.714	26.913	121.9	0.00	8.82	1483.8	0.000	0.000	60	8.870	34.714	26.913	121.9	0.00	8.82	1483.8	0.000	0.000
70	6.780	34.644	27.188	86.8	0.00	6.72	1486.7	0.000	0.000	70	6.780	34.644	27.188	86.8	0.00	6.72	1486.7	0.000	0.000	70	6.780	34.644	27.188	86.8	0.00	6.72	1486.7	0.000	0.000
80	5.410	34.617	27.318	65.1	0.00	5.34	1484.3	0.000	0.000	80	5.410	34.617	27.318	65.1	0.00	5.34	1484.3	0.000	0.000	80	5.410	34.617	27.318	65.1	0.00	5.34	1484.3	0.000	0.000

STATION 8 DATE= 04/04/83										19.23E 117.53E TIME= 044900T										RAWEL 23/83 DEPTH= 5685									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	HC	POT.TEMP	S.S
0	27.130	34.405	22.230	556.1	0.00	27.13	1539.0	0.000	0.000	0	27.130	34.405	22.230	556.1	0.00	27.13	1539.0	0.000	0.000	0	27.130	34.405	22.230	556.1	0.00	27.13	1539.0	0.000	0.000
10	26.780	34.545	22.444	540.7	0.00	26.78	1529.2	0.000	0.000	10	26.780	34.545	22.444	540.7	0.00	26.78	1529.2	0.000	0.000	10	26.780	34.545	22.444	540.7	0.00	26.78	1529.2	0.000	0.000



STATION 9 15.215 119.34E RAHWL 23/83  
 DATE= 09/06/83 TIME= 0737GMT DEPTH= 2700

DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	OC	POT.TEMP	S.S	Dyn. #
m	°C	Ppt	CL/T	ML/L	°C	N/Sec				
0	27.290	34.558	22.294	553.0	0.00	27.29	1539.8			
085	49	27.220	34.473	22.253	550.8	0.00	27.21	1540.1		
085	98	22.450	34.358	22.157	418.8	0.00	22.43	1529.7		
085	148	18.160	34.598	24.901	309.0	0.00	18.13	1511.2		
085	197	15.180	34.557	25.644	237.1	0.00	15.18	1510.8		
085	295	11.280	34.590	26.409	167.6	0.00	11.22	1499.2		
085	452	8.450	34.682	26.850	119.3	0.00	8.40	1482.3		
085	600	5.550	34.620	27.181	87.7	0.00	5.48	1480.1		
085	800	5.430	34.614	27.219	85.4	0.00	5.35	1480.9		
085	1103	4.380	34.610	27.443	74.3	0.00	4.28	1487.5		
085	1482	3.430	34.646	27.577	61.7	0.00	3.32	1488.8		
15L	0	27.29	34.56	22.294	553.0	0.00	27.29	1539.8	0.000	
15L	10	27.28	34.53	22.298	554.2	0.00	27.27	1539.7	1.055	
15L	25	27.25	34.49	22.279	550.0	0.00	27.25	1539.9	1.130	
15L	50	27.12	34.46	22.287	555.7	0.00	27.10	1539.8	1.278	
15L	75	24.81	34.52	23.098	479.0	0.00	24.59	1534.6	1.408	
15L	100	22.28	34.58	23.810	411.8	0.00	22.24	1529.2	1.520	
15L	150	18.12	34.60	24.657	303.8	0.00	18.08	1518.8	1.690	
15L	200	15.04	34.65	25.664	234.3	0.00	15.01	1510.4	1.834	
15L	250	12.94	34.61	26.128	195.6	0.00	12.82	1503.9	1.942	
15L	300	10.58	34.59	26.428	168.1	0.00	11.14	1499.0	1.933	
15L	400	9.65	34.64	26.729	138.7	0.00	9.40	1495.2	1.180	
15L	500	8.34	34.68	26.932	118.4	0.00	8.20	1482.0	1.317	
15L	600	7.31	34.63	27.083	104.3	0.00	7.25	1480.6	1.430	
15L	800	5.87	34.62	27.264	90.2	0.00	5.80	1487.2	1.828	
15L	1000	5.01	34.62	27.366	81.4	0.00	4.83	1487.1	1.787	
15L	1300	4.00	34.63	27.484	66.7	0.00	3.88	1487.9	2.024	

 STATION 10 13.506 118.43E RAHWL 23/83  
 DATE= 09/06/83 TIME= 1735GMT DEPTH= 5000

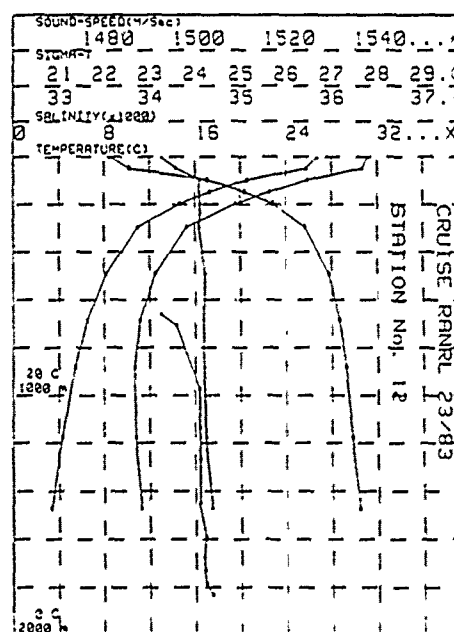
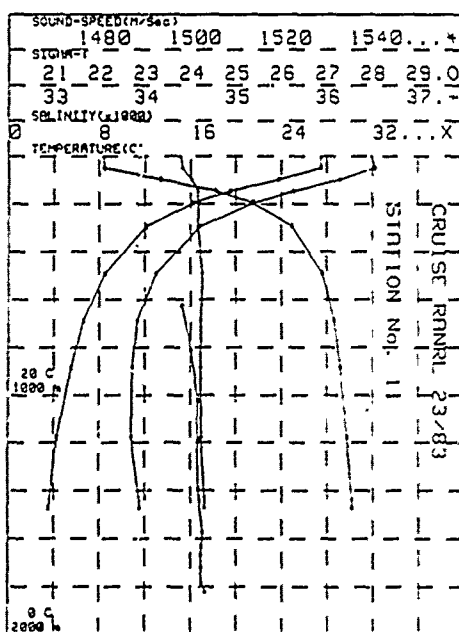
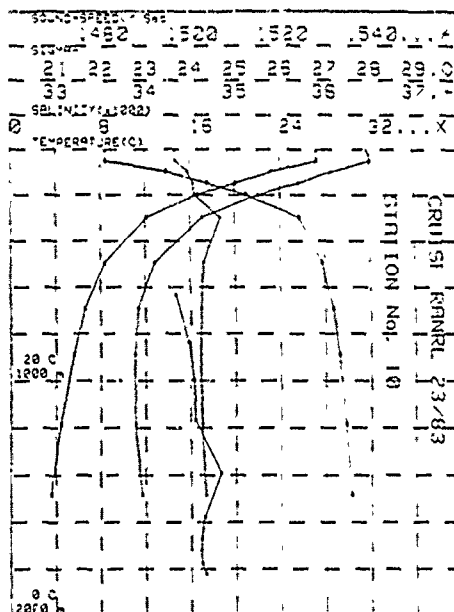
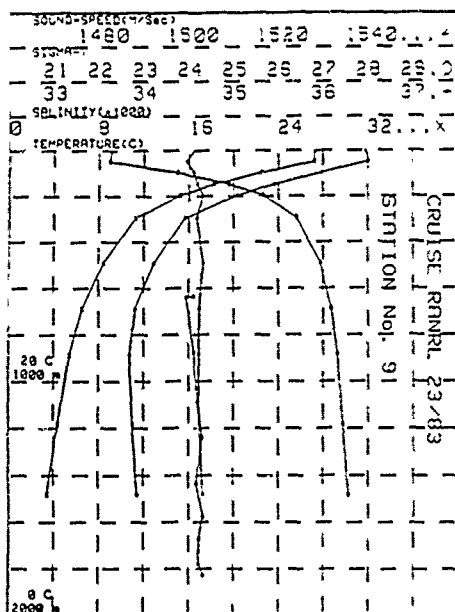
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	OC	POT.TEMP	S.S	Dyn. #
m	°C	Ppt	CL/T	ML/L	°C	N/Sec				
085	0	27.338	34.336	22.114	570.2	0.00	27.33	1539.4	0.000	
085	50	27.310	34.339	22.123	571.4	0.00	27.30	1540.2		
085	99	23.130	34.416	23.473	444.8	0.00	23.11	1531.4		
085	14	20.080	34.537	24.294	357.8	0.00	20.03	1524.2		
085	191	18.840	34.548	25.253	278.8	0.00	18.81	1515.2		
085	298	12.180	34.640	26.473	185.8	0.00	12.12	1502.7		
085	490	8.300	34.647	26.836	119.7	0.00	8.24	1482.1		
085	682	6.608	34.610	27.173	86.5	0.00	6.53	1480.4		
085	880	5.590	34.609	27.295	86.0	0.00	5.51	1487.6		
085	1186	4.418	34.626	27.444	74.6	0.00	4.31	1487.7		
085	1484	3.574	34.687	27.588	63.5	0.00	3.48	1486.2		
15L	0	27.33	34.34	22.114	570.2	0.00	27.33	1539.4	0.000	
15L	10	27.33	34.34	22.118	570.4	0.00	27.32	1539.6	0.057	
15L	25	27.32	34.34	22.118	570.8	0.00	27.31	1539.8	1.143	
15L	50	27.31	34.34	22.123	571.4	0.00	27.30	1540.2	1.286	
15L	75	25.11	34.42	22.867	501.1	0.00	25.09	1535.6	1.420	
15L	100	23.17	34.48	23.482	442.2	0.00	23.13	1531.5	1.538	
15L	150	18.98	34.54	24.413	355.8	0.00	18.96	1524.0	1.728	
15L	200	16.59	34.65	25.298	275.4	0.00	16.55	1515.0	1.886	
15L	250	14.12	34.73	25.823	212.3	0.00	14.08	1504.2	1.920	
15L	300	12.11	34.64	26.481	185.2	0.00	12.07	1502.8	1.118	
15L	400	9.87	34.72	26.127	128.0	0.00	9.83	1496.4	1.528	
15L	500	8.39	34.66	26.844	119.2	0.00	8.29	1482.0	1.400	
15L	600	7.34	34.63	27.077	107.1	0.00	7.28	1489.7	1.514	
15L	800	6.02	34.61	27.242	82.8	0.00	5.99	1487.8	1.712	
15L	1000	5.11	34.61	27.354	82.7	0.00	5.02	1487.6	1.887	
15L	1300	4.05	34.64	27.484	70.0	0.00	3.94	1486.1	2.116	

 STATION 11 14.085 120.53E RAHWL 23/83  
 DATE= 10/06/83 TIME= 1548GMT DEPTH= 2460

DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	OC	POT.TEMP	S.S	Dyn. #
m	°C	Ppt	CL/T	ML/L	°C	N/Sec				
085	0	27.500	34.398	22.106	571.0	0.00	27.50	1539.9		
085	49	27.490	34.410	22.119	571.8	0.00	27.48	1540.7		
085	93	23.160	34.509	23.342	458.5	0.00	23.14	1522.9		
085	147	19.520	34.585	24.572	340.5	0.00	19.48	1522.7		
085	186	16.220	34.584	25.380	281.6	0.00	16.18	1513.9		
085	295	12.110	34.586	26.247	185.4	0.00	12.07	1502.2		
085	491	8.520	34.633	26.907	122.7	0.00	8.47	1492.5		
085	688	6.610	34.615	27.188	94.8	0.00	6.55	1484.3		
085	884	5.520	34.613	27.307	86.7	0.00	5.44	1487.2		
085	1179	4.280	34.622	27.454	73.0	0.00	4.19	1487.0		
085	1472	3.550	34.654	27.580	63.8	0.00	3.44	1486.9		
15L	0	27.50	34.40	22.106	571.0	0.00	27.50	1539.9	0.000	
15L	10	27.50	34.40	22.109	571.1	0.00	27.50	1540.0	0.057	
15L	25	27.49	34.40	22.113	571.4	0.00	27.49	1540.3	1.143	
15L	50	27.42	34.41	22.143	569.4	0.00	27.41	1540.5	1.288	
15L	75	25.57	34.47	22.787	510.7	0.00	25.56	1536.8	1.421	
15L	100	23.57	34.51	23.401	451.0	0.00	23.55	1522.5	1.541	
15L	150	19.29	34.59	24.628	335.2	0.00	19.27	1522.1	1.737	
15L	200	16.02	34.59	25.422	260.6	0.00	15.99	1513.3	1.846	
15L	250	13.78	34.59	25.897	219.1	0.00	13.75	1508.9	1.906	
15L	300	12.00	34.59	26.268	181.4	0.00	11.84	1501.8	1.106	
15L	400	9.84	34.62	26.650	146.3	0.00	9.83	1486.3	1.273	
15L	500	8.41	34.63	26.921	121.3	0.00	8.36	1482.2	1.408	
15L	600	7.34	34.62	27.067	104.1	0.00	7.30	1489.8	1.524	
15L	800	5.94	34.61	27.252	91.6	0.00	5.89	1487.6	1.722	
15L	1000	4.97	34.61	27.371	80.8	0.00	4.89	1487.1	1.895	
15L	1300	3.82	34.63	27.504	68.6	0.00	3.82	1487.8	2.119	

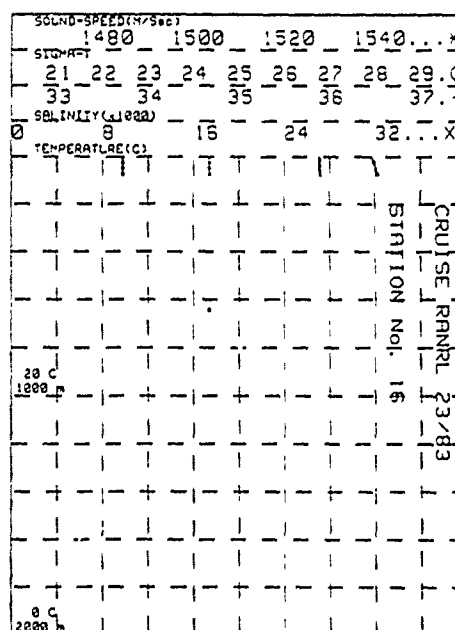
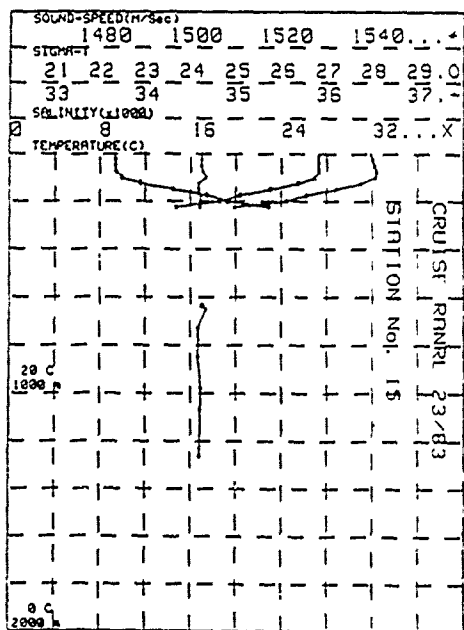
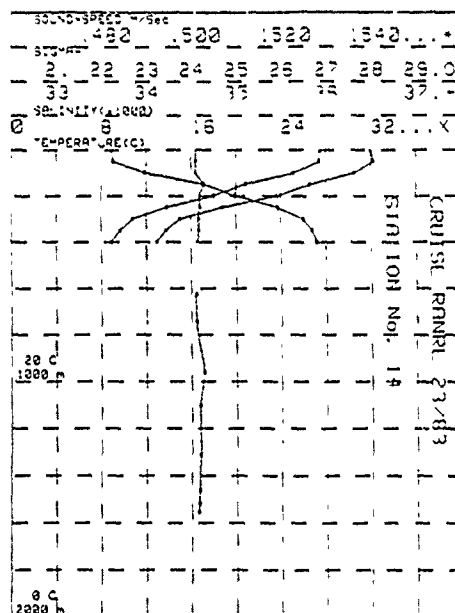
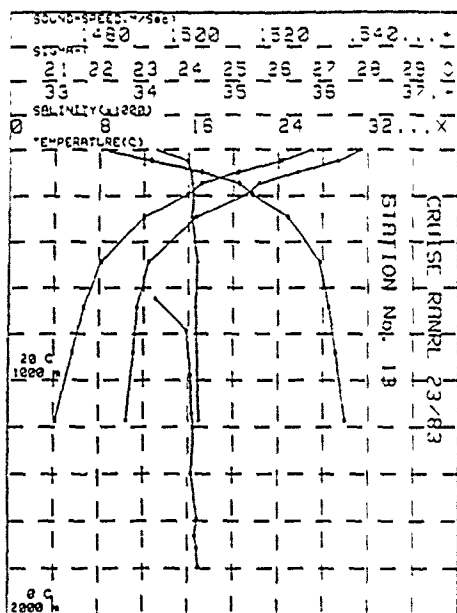
 STATION 12 11.108 118.42E RAHWL 23/83  
 DATE= 11/06/83 TIME= 1320GMT DEPTH= 6493

DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	OC	POT.TEMP	S.S	Dyn. #
m	°C	Ppt	CL/T	ML/L	°C	N/Sec				
085	0	26.798	34.128	22.130	568.7	0.00	26.76	1536.0		
085	49	26.820	34.263	22.558	529.7	0.00	26.81	1536.8		
085	98	20.150	34.547	24.272	387.6	0.00	20.13	1524.7		
085	149	17.300	34.548	25.087	290.2	0.00	17.28	1518.3		
085	190	14.490	34.554	25.713	232.3	0.00	14.39	1509.9		
085	297	10.170	34.645	26.427	165.8	0.00	10.13	1496.2		
085	483	8.198	34.610	26.838	119.3	0.00	8.14	1481.2		
085	686	6.518	34.594	27.184	99.0	0.00	6.45	1487.9		
085	882	5.410	34.590	27.308	86.3	0.00	5.33	1486.7		
085	1177	4.280	34.613	27.450	73.5	0.00	4.19	1487.0		
085	1473	3.530	34.683	27.589	59.3	0.00	3.44	1486.1		
15L	0	26.79	34.13	22.130	568.7	0.00	26.79	1536.0	0.000	
15L	10	26.79	34.13	22.117	568.8	0.00	26.79	1537.7	0.096	
15L	25	26.30	34.20	22.548	548.8	0.00	26.29	1537.4	1.140	
15L	50	25.80	34.30	22.801	525.8	0.00	25.68	1536.5	1.274	
15L	75	22.83	34.46	23.540	434.6	0.00	22.81	1530.0	1.398	
15L	100	20.48	34.59	24.290	368.9	0.00	20.44	1524.5	1.487	
15L	150	17.24	34.55	25.111	288.9	0.00	17.22	1515.2	1.601	
15L	200	14.58	34.54	25.722	231.7	0.00	14.55	1508.2	1.791	
15L	250	12.53	34.55	26.123	194.2	0.00	12.50	1502.7	1.888	
15L	300	10.82	34.56	26.437	164.8	0.00	10.80	1498.8	1.888	
15L	400	9.37	34.59	26.732	138.1	0.00	9.33	1484.1	1.142	
15L	500	8.12	34.61	26.949	118.4	0.00	8.07	1481.1	1.272	
15L	600	7.18	34.60	27.075	107.1	0.00	7.13	1489.1	1.368	
15L	800	5.84	34.60	27.253	91.2	0.00	5.77	1487.1	1.543	
15L	1000	4.83	34.60	27.364	81.3	0.00	4.68	1486.7	1.744	
15L	1300	3.87	34.64	27.512	67.6	0.00	3.77	1487.4	1.978	



STATION 13 DATE= 12/06/83										13.018 120.106 RAHWL 23/83 TIME= 1150GMT DEPTH= 1554									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	OC	POT.TEMP	S.S										
m	°C	Pps	kg/m <sup>3</sup>	°C	°C	°C	°C	°C	g/g										
0	27.040	34.137	22.057	175.7	0.00	27.04	1536.6	0.000	0.000										
005	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
010	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
015	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
020	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
025	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
030	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
035	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
040	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
045	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
050	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
055	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
060	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
065	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
070	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
075	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
080	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
085	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
090	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
095	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
100	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
105	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
110	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
115	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
120	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
125	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
130	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
135	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
140	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
145	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
150	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
155	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
160	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
165	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
170	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
175	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
180	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
185	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
190	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
195	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										
200	27.040	34.141	22.107	175.7	0.00	27.04	1536.6	0.000	0.000										

STATION 14				13.408 122.154		RAHWL 23/83	
DATE= 14/06/83				TIME= 0645GMT		DEPTH= 482	
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL	POT.TEMP	S.S
m	°C	Pps	kg/m <sup>3</sup>	°C	°C	°C	g/g
000	0 27.480	34.558	22.231	590.1	0.00	27.48	1540.0
005	50 27.370	34.552	22.264	597.9	0.00	27.46	1540.6
010	100 29.120	34.552	22.264	482.4	0.00	29.10	1536.3
015	150 27.460	34.561	22.264	596.7	0.00	27.46	1539.3
020	200 17.850	34.584	24.574	603.0	0.00	17.82	1519.1
025	250 13.750	34.590	25.629	213.1	0.00	13.71	1507.0
030	300 10.750	34.566	26.498	156.1	0.00	10.71	1497.3
035	350 9.000	34.566	26.500	156.1	0.00	9.00	1498.3
040	400 0.810	34.575	26.500	131.4	0.00	0.87	1483.4
13L	0 27.48	34.56	22.231	590.1	0.00	27.48	1540.0
13L	10 27.48	34.56	22.237	596.8	0.00	27.48	0.0000
13L	20 27.42	34.55	22.267	595.0	0.00	27.42	1540.3
13L	50 27.37	34.55	22.264	597.9	0.00	27.38	1540.6
13L	70 29.21	34.55	22.540	522.4	0.00	29.46	1399.1
13L	100 27.42	34.55	22.264	596.7	0.00	27.42	1540.3
13L	150 29.79	34.64	24.279	368.7	0.00	29.78	1519.5
13L	200 17.96	34.59	24.674	603.0	0.00	17.82	1519.1
13L	250 13.75	34.60	25.629	213.1	0.00	13.71	1507.0
13L	300 10.75	34.56	26.498	156.1	0.00	10.71	1497.3
13L	400 0.81	34.57	26.500	131.4	0.00	0.87	1483.4



STATION 18		14.50E	125.00E	RANGE 23.83		DEPTH= 30			
DATE= 15/06/83		TIME= 041020H							
DEPTH	m	TEMP	SALINITY	SIGMA-T	A.S.V.	CHL	POT. TEMP	S.S.	Dyn. m.
		°C	Pct		CL/T	MC/L	°C	R/Sect	
088	9	26.430	34.513	22.533	520.1	0.00	26.43	1537.6	
088	10	26.370	34.511	22.531	520.0	0.00	26.37	1537.6	
088	20	26.310	34.518	22.538	520.0	0.00	26.31	1537.7	
088	30	26.230	34.574	22.642	520.0	0.00	26.23	1537.7	
134	9	26.63	34.51	22.533	520.0	0.00	26.43	1537.6	0.008
134	10	26.37	34.51	22.531	520.0	0.00	26.37	1537.6	
134	25	26.27	34.54	22.603	524.4	0.00	26.27	1537.7	.132

### Cruise RANRL TC 1

#### *Notes for cruise TC 1*

Salinity determinations - Salinities for stations 1 to 5 were determined with a 1970 Charlottenlund salinity standard (quoted ratio of 1.00005, batch P 53, salinity 35.002, CI = 19.375, 2 to 5 March 1970).

The quoted ratio was found to be incorrect when batch P 62 (27 May 1973, CI = 19.3775, Charlottenlund) gave a different value for the substandard during salinity analysis of stations 6 to 8. Salinities for stations 9 to 12 were analysed at CSIRO with fresher batches (P 91) after the cruise.

Batch P 62 was measured for conductivity ratio against various fresh batches (including P 91; P 99 27 July 1984) over the next few years, and was found to be good.

Batch P 53 was measured against batches P 62 and P 99 over the next few years and a new value determined for the conductivity ratio of 0.99972, and not 1.00005. Batch P 53 showed no inconsistencies, but phials appeared to be leached. The conductivity ratios taken using P 53 for stations 1 to 5 were adjusted by multiplying by (1.00005/0.99972) and the salinities recalculated. (This increases the value found using P 53 by about 0.013 PSU). The incorrect ratio given may have been caused by the values being offset in the vertical on the paperwork supplied with batch P 53.

#### *Other sources of data for cruise TC 1*

See other sources of data for cruise TC 2.



*Additional Nansen data for cruise TC 1*

Depth (m)	T	S	O <sub>2</sub>	
2435	1.99	-	-	Station 1
2922	1.586	-	-	
3409	1.260	-	-	
2430	-	34.715	4.18	Station 4
3406	1.298	-	4.41	
2442	-	34.717	4.11	Station 5
697	7.26	-	4.28	Station 6
4556	1.167	-	4.50	Station 8
2370	2.02	-	4.08	Station 9
2773	1.70	-	4.23	
4539	1.145	34.724(?)	4.44	Station 11
689	7.46	-	-	Station 12
1086	4.72	-	3.99	
3954	1.172	-	4.29	

Occasional mismatches are seen in the profiles for TC 1 and TC 2 eg in station 6 at 1086 and 1095 m. A bottle was usually placed at nominal depth of 1200 m on both shallow and deep casts. The top bottle on the deep cast occasionally came to be higher than the bottom bottle on the shallow cast, and values do not always match exactly, presumably because of ship drift. Both sets of values have been included in the tables, although only one is necessary for most calculations.

Nansen station positions for cruise TC 1.

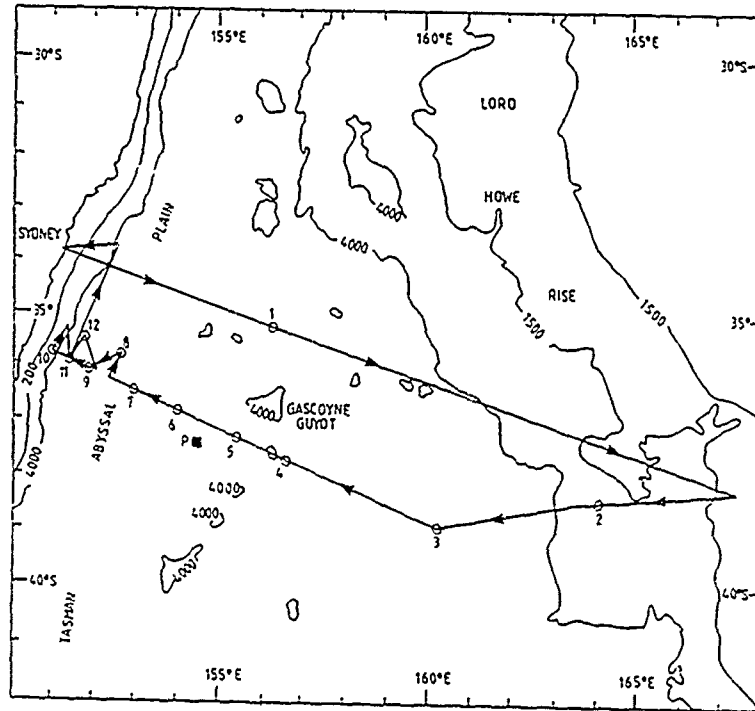


Figure 6. Track chart of cruise TC 1 (hydrostations are numbered)

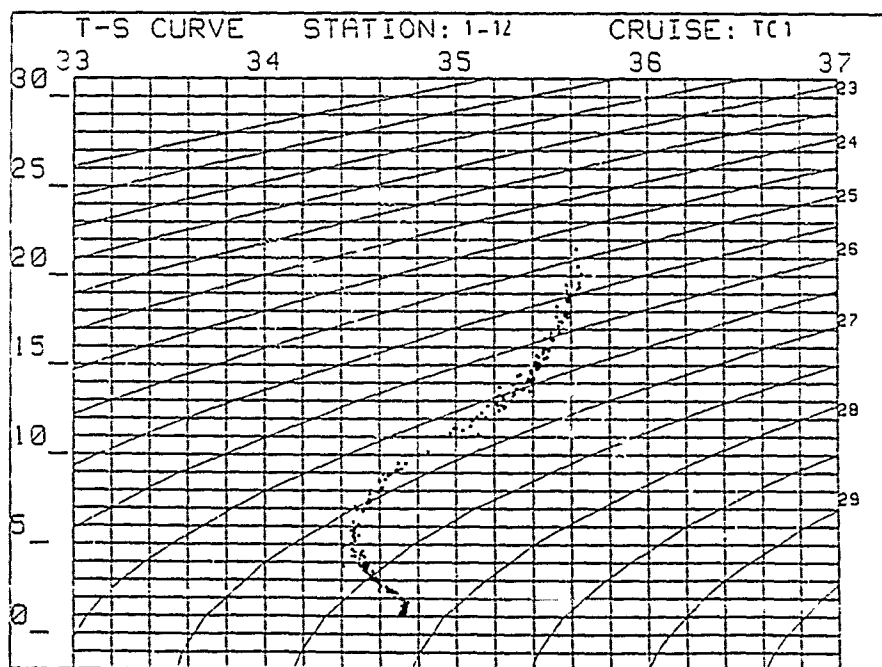
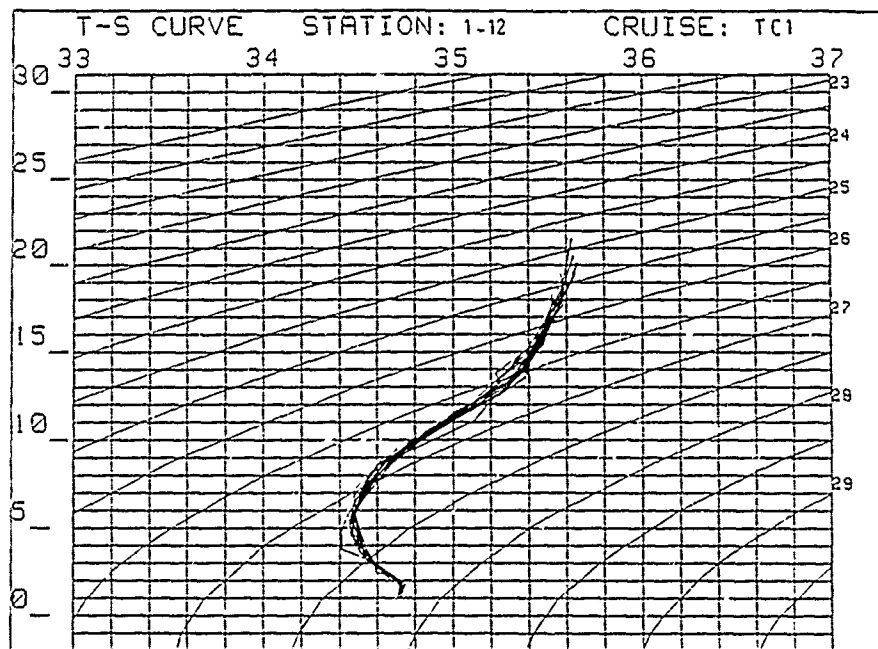


Figure 7. Temperature-salinity curves and scatter plot for cruise TC 1

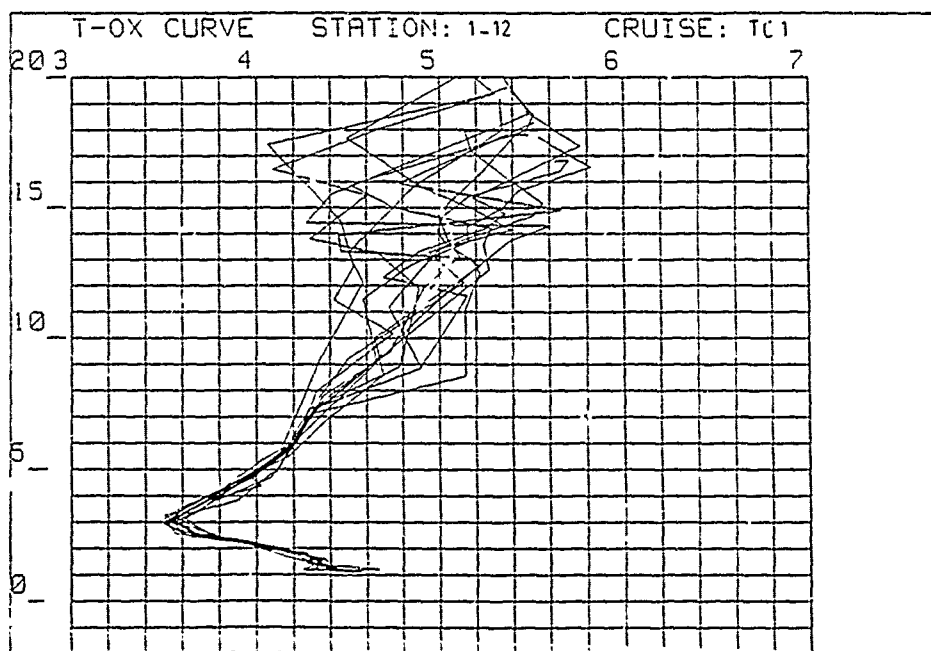
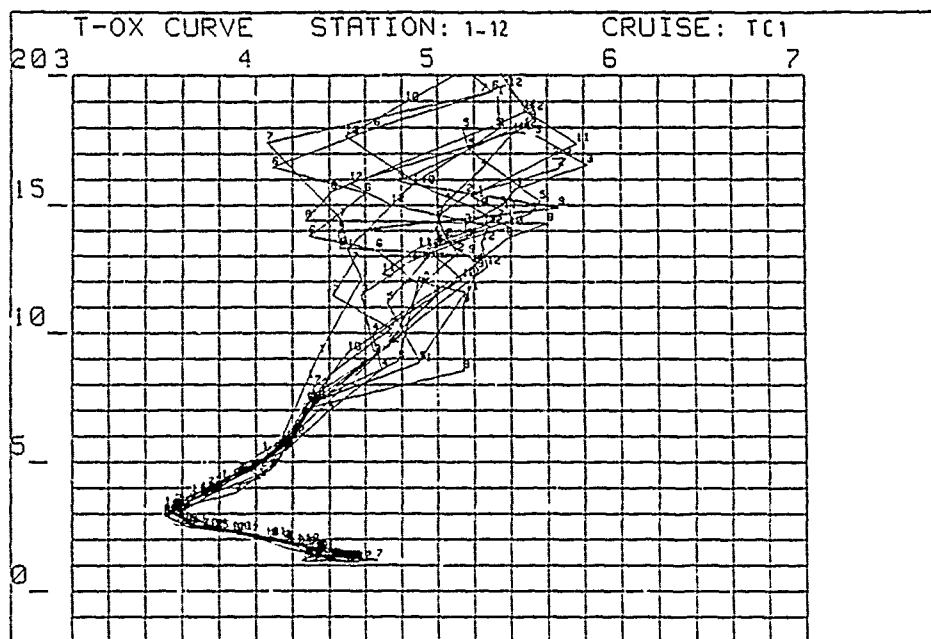
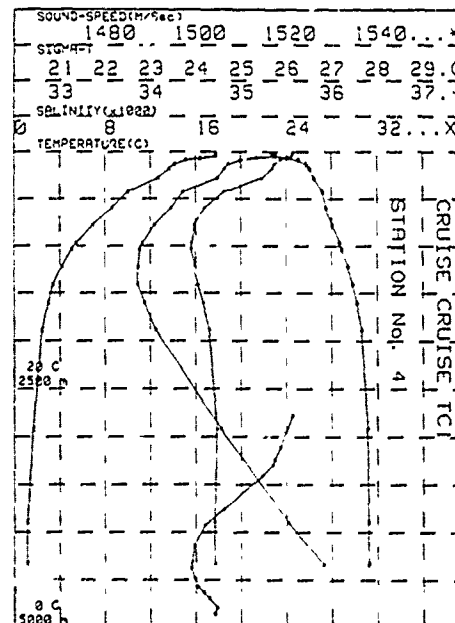
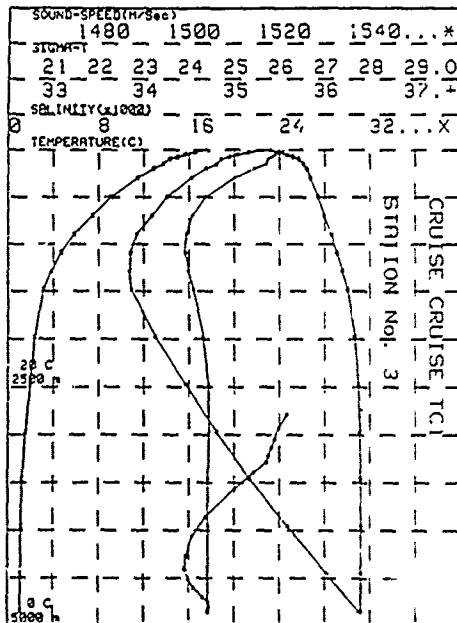
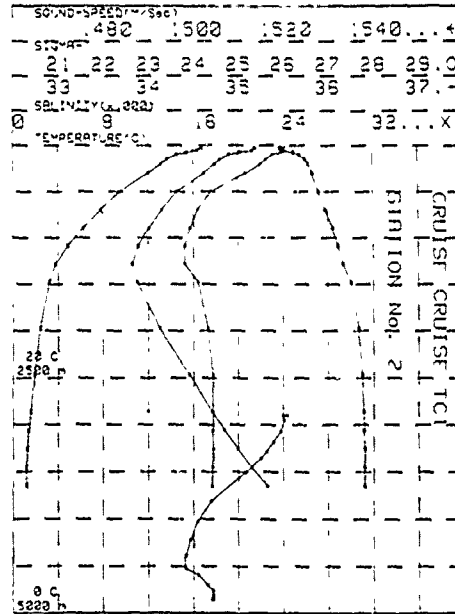
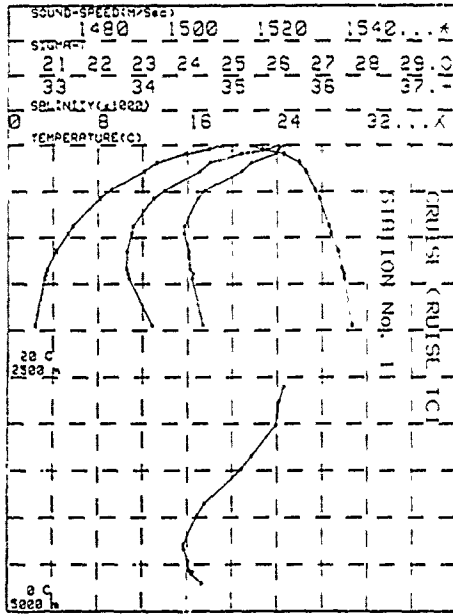


Figure 8. Temperature-oxygen curves for cruise TC 1

ISA	0	18 81	35,54	25,973	202,2	5,43	10,81	513,0	0,000
ISA	10	18,00	35,51	25,947	203,1	5,47	10,90	513,0	0,000
ISA	25	18,78	35,48	25,944	205,8	5,70	10,81	513,0	0,051
ISA	50	18,81	35,51	25,943	209,0	5,40	10,81	513,0	0,051
ISA	75	15,43	35,47	26,241	179,1	5,18	14,52	510,0	0,148
ISA	100	15,55	35,39	26 371	147,4	5 00	14,54	510,1	1,192
ISA	150	13,98	35,31	26,495	158,9	5,05	13,67	510,0	1,250
ISA	200	13,12	35,25	26,581	151,7	5,11	13,59	510,0	1,273
ISA	250	12,22	35,18	26,611	141,1	5,08	13,51	510,0	1,280
ISA	300	11,96	35,08	26,657	144,8	4,82	11,82	510,2	0,946
ISA	400	10,54	34,86	26,729	129,4	4,85	10,50	509,9	0,640
ISA	500	9,50	34,70	26,801	123,7	4,73	9,44	509,4	0,707
ISA	600	8,62	34,61	26,878	127,7	4,52	8,58	509,7	1,071
ISA	700	8,00	34,50	26,930	118,0	4,41	8,09	509,8	1,240
ISA	1000	5,48	34,44	27,130	99,7	4,15	5,37	508,7	1,364
ISA	1300	3,74	34,43	27,355	81,0	3,85	3,64	508,6	1,640
ISA	1500	3,17	34,36	27,518	66,5	3,58	3,00	508,7	1,748
ISA	2000	2,30	34,47	27,676	51,3	3,81	2,21	509,2	2,082
ISA	2500	1,90	34,72	27,758	43,5	4,17	1,72	509,4	2,340
ISA	3000	1,44	34,72	27,790	37,0	4,12	1,22	510,0	2,550
ISA	3500	1,19	34,72	27,905	37,1	4,44	1,33	513,0	2,713

15L	0	17.00	35.57	25.58	222.8	5.48	17.00	1318.6	0.000
15L	10	17.40	35.57	25.741	222.7	5.48	17.00	1318.6	0.000
15L	20	17.80	35.57	25.748	222.5	5.47	17.20	1317.0	0.000
15L	50	17.40	35.55	25.840	218.5	5.34	17.39	1318.2	0.000
15L	75	15.81	35.47	26.151	187.7	5.14	15.80	1311.7	0.161
15L	100	14.78	35.47	26.345	170.3	5.02	14.75	1308.8	0.000
15L	150	13.90	35.38	26.487	157.7	5.00	13.98	1309.8	0.000
15L	200	13.31	35.33	26.550	153.0	5.12	13.48	1304.3	0.000
15L	250	13.09	35.28	26.598	149.7	5.22	13.05	1305.8	0.000
15L	300	12.28	35.16	26.658	144.7	5.11	12.24	1303.5	0.000
15L	350	10.39	34.97	26.826	134.4	4.70	10.34	1298.5	0.000
15L	500	9.98	34.71	26.923	121.6	4.68	9.93	1294.1	0.781
15L	800	8.37	34.40	27.062	128.0	4.69	8.31	1294.4	0.000
15L	800	6.75	34.48	26.824	112.4	4.38	6.67	1290.6	1.154
15L	1000	5.27	34.46	27.312	96.4	4.90	5.18	1287.9	1.744
15L	1300	4.11	34.41	27.610	79.7	5.48	4.12	1287.9	1.000
15L	1500	3.21	34.58	27.531	67.1	5.38	3.20	1287.9	1.000
15L	2000	2.34	34.47	27.478	51.1	3.89	2.19	1293.7	2.000
15L	2500	1.93	34.71	27.748	44.8	4.0	1.75	1299.6	2.000
15L	3000	1.33	34.61	27.800	40.6	4.1	1.38	1298.1	2.000
15L	3500	1.27	34.71	27.793	36.3	4.34	1.01	1314.1	2.731
15L	4000	1.19	34.71	27.800	36.1	4.43	61	1323.3	2.731



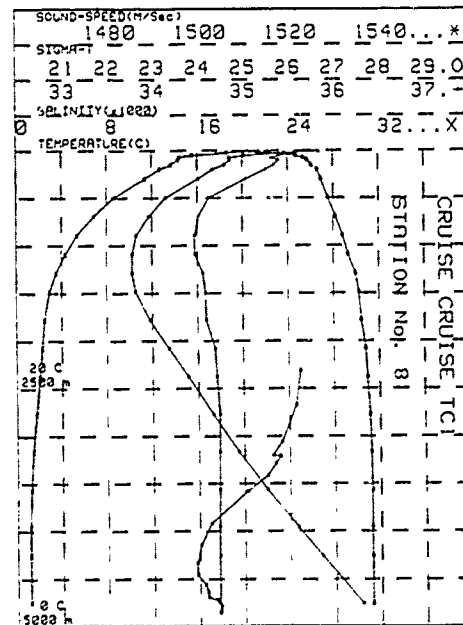
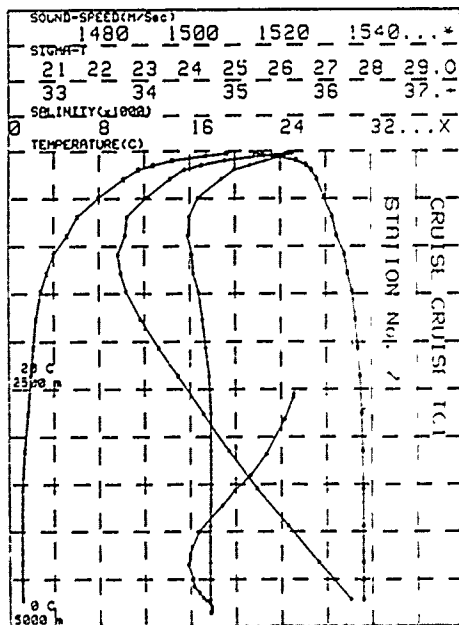
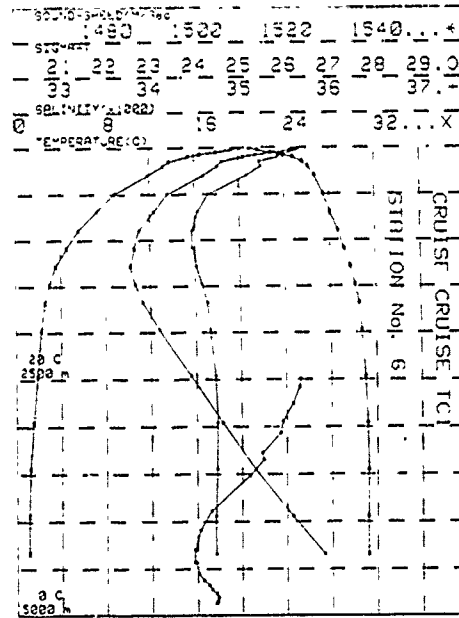
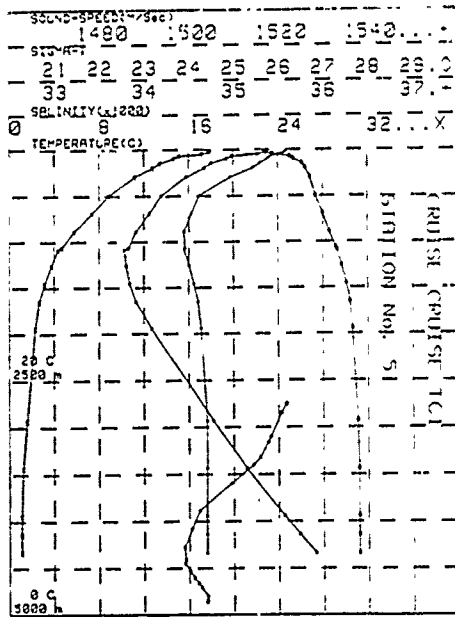
STATION 3 DATE= 09/12/83									
TIME= 03540LT									
CRUISE TC1									
DEPTH= 4513									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S	Dyn	
m	°C	Pct	CL/T	ML/L	°C	W/sec			
0	17.50	35.593	25.740	224.4	5.32	17.55	1517.1		
05	17.50	35.581	25.733	225.9	5.14	17.54	1517.4		
10	17.470	35.533	25.684	218.4	5.13	17.18	1515.5		
15	17.450	35.413	25.620	177.3	5.14	15.14	1509.6		
20	17.420	35.344	25.558	170.5	5.11	14.67	1508.5		
25	17.430	35.300	25.538	152.7	5.00	13.41	1505.1		
30	17.400	35.218	25.411	147.0	4.92	12.73	1503.0		
35	17.380	35.169	25.378	138.5	4.72	11.14	1499.5		
40	17.350	35.121	25.342	129.2	4.90	8.82	1493.9		
45	17.330	35.100	25.323	115.7	4.31	7.28	1491.2		
50	17.300	35.050	25.285	102.5	4.19	5.71	1488.3		
55	17.270	35.000	25.247	89.3	3.97	4.58	1486.0		
60	17.240	34.954	25.214	85.0	4.02	4.27	1485.7		
65	17.210	34.905	25.177	75.9	3.70	3.64	1484.1		
70	17.180	34.858	25.141	65.9	3.55	3.04	1486.9		
75	17.150	34.808	25.101	57.8	3.54	2.58	1488.3		
80	17.120	34.758	25.059	52.5	3.22	2.19	1491.8		
85	17.090	34.707	25.017	41.7	3.44	1.37	1505.9		
90	17.060	34.657	24.975	37.7	4.48	.80	1521.2		
95	17.030	34.607	24.933	37.7	4.48	.77	1524.7		
100	17.000	34.557	24.891	36.8	4.50	.77	1528.3		

15L	0	17.95	35.59	25.740	224.4	5.32	17.55	1517.1	0.000
15L	10	17.95	35.59	25.737	225.0	5.22	17.94	1517.2	.022
15L	25	17.94	35.58	25.733	225.8	5.14	17.94	1517.4	.058
15L	50	17.17	35.53	25.684	218.4	5.13	17.18	1515.5	.111
15L	75	15.15	35.42	25.290	177.3	5.14	15.14	1509.6	.160
15L	100	14.68	35.38	25.338	170.5	5.11	14.67	1508.5	.203
15L	150	13.43	35.30	25.238	152.7	5.00	13.41	1505.1	.284
15L	200	12.78	35.22	25.111	147.0	4.92	12.73	1503.0	.359
15L	250	11.93	35.09	25.069	142.4	4.80	11.90	1501.4	.431
15L	300	11.18	34.97	25.019	138.5	4.72	11.14	1499.5	.502
15L	400	9.83	34.78	25.078	134.4	4.81	9.88	1494.4	.638
15L	500	8.87	34.62	25.042	129.2	4.92	8.82	1493.9	.769
15L	600	8.08	34.57	25.027	122.5	4.54	8.02	1492.6	.895
15L	800	6.48	34.48	25.073	109.0	4.28	6.41	1489.5	1.128
15L	1000	5.38	34.48	25.213	94.5	4.08	5.29	1487.2	1.330
15L	1500	3.64	34.52	25.437	75.9	3.68	3.54	1486.2	1.579
15L	1500	3.04	34.57	25.529	65.9	3.58	2.93	1487.1	1.717
15L	2000	2.29	34.63	25.647	51.8	3.86	2.19	1492.5	2.000
15L	2500	1.31	34.69	25.733	45.9	4.19	1.73	1499.5	2.245
15L	3000	1.53	34.71	25.777	41.7	4.37	1.31	1508.1	2.465
15L	3500	1.22	34.71	25.792	38.0	4.44	.75	1513.8	2.682
15L	4000	1.10	34.71	25.802	37.7	4.48	.79	1522.2	2.852

STATION 8 DATE= 10/12/83									
TIME= 03540LT									
CRUISE TC1									
DEPTH= 4480									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S	Dyn	
m	°C	Pct	CL/T	ML/L	°C	W/sec			
0	20.10	35.894	25.235	272.4	5.17	20.10	1523.2		
05	25	35.843	25.419	255.8	5.20	19.27	1521.6		
10	20.10	35.870	25.415	228.5	4.85	17.97	1517.9		
15	18.490	35.461	25.090	203.0	4.09	16.48	1512.8		
20	15.480	35.430	25.202	183.5	4.50	15.44	1511.0		
25	13.780	35.224	25.407	165.2	4.29	13.78	1506.2		
30	13.240	35.242	25.532	154.5	4.68	13.21	1505.3		
35	11.680	35.084	25.678	142.8	4.89	11.64	1502.1		
40	8.800	34.858	25.881	127.0	4.78	8.85	1494.1		
45	7.290	34.535	27.012	114.8	4.28	7.22	1491.0		
50	5.640	34.472	27.181	98.8	4.15	5.58	1487.7		
55	4.570	34.406	27.302	87.2	3.91	4.48	1486.5		
60	4.180	34.466	27.319	85.7	3.92	4.47	1486.6		
65	3.570	34.515	27.444	72.9	3.71	3.47	1485.7		
70	3.020	34.573	27.542	63.4	3.56	2.91	1486.7		
75	2.610	34.633	27.627	55.2	3.64	2.49	1486.4		
80	2.280	34.682	27.678	50.8	3.94	2.14	1482.0		
85	1.910	34.717	27.752	44.0	4.17	1.73	1494.9		
90	1.555	34.738	27.798	39.4	4.34	1.34	1505.9		
95	1.550	34.733	27.792	39.7	4.25	1.33	1505.9		
100	1.221	34.726	27.810	38.9	4.43	.98	1513.0		
105	1.133	34.708	27.802	37.8	4.52	.82	1521.3		
110	1.124	34.713	27.806	38.1	4.53	.77	1528.3		

15L	0	20.10	35.85	25.235	272.4	5.17	20.10	1523.2	0.000
15L	10	18.89	35.65	25.295	287.0	5.22	18.89	1522.8	.027
15L	25	18.37	35.64	25.419	255.8	5.20	18.37	1521.6	.084
15L	50	17.98	35.57	25.415	228.5	4.85	17.97	1517.9	.127
15L	75	16.49	35.46	25.090	203.0	4.09	16.48	1512.8	.180
15L	100	15.48	35.43	25.202	183.5	4.50	15.44	1511.0	.229
15L	150	13.78	35.22	25.407	165.2	4.29	13.78	1506.2	.316
15L	200	13.24	35.24	25.532	154.5	4.68	13.21	1505.3	.396
15L	250	12.57	35.17	25.608	148.3	4.80	12.54	1503.7	.472
15L	300	11.68	35.08	25.678	142.8	4.89	11.64	1502.1	.545
15L	400	10.21	34.83	25.878	134.4	4.80	10.17	1497.5	.683
15L	500	8.89	34.56	26.057	126.9	4.78	8.84	1494.9	.814
15L	600	8.05	34.59	26.841	120.9	4.47	7.99	1492.5	.938
15L	800	6.35	34.49	27.107	109.8	4.23	6.27	1499.0	1.185
15L	1000	4.85	34.47	27.191	97.3	3.91	4.77	1487.0	1.363
15L	1500	3.52	34.52	27.453	72.1	3.69	3.42	1485.7	1.610
15L	1500	2.97	34.56	27.553	62.3	3.58	2.88	1486.9	1.744
15L	2000	2.26	34.67	27.683	50.1	3.98	2.11	1492.4	2.018
15L	2500	1.88	34.72	27.755	43.7	4.18	1.70	1499.8	2.253
15L	3000	1.51	34.73	27.795	39.5	4.27	1.29	1508.4	2.459
15L	3500	1.21	34.72	27.809	38.9	4.44	.94	1513.0	2.649
15L	4000	1.12	34.71	27.802	37.8	4.52	.81	1522.3	2.838

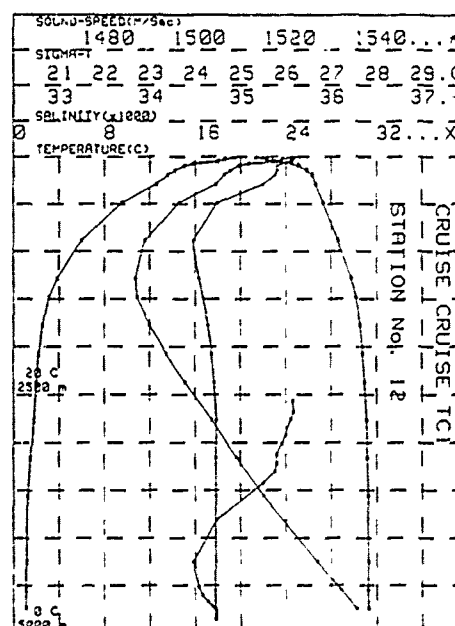
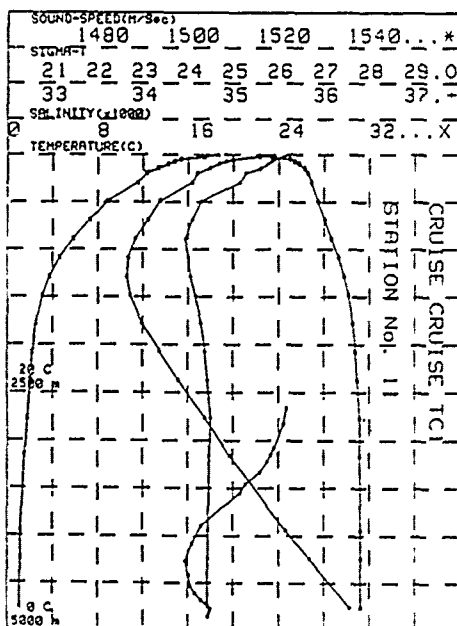
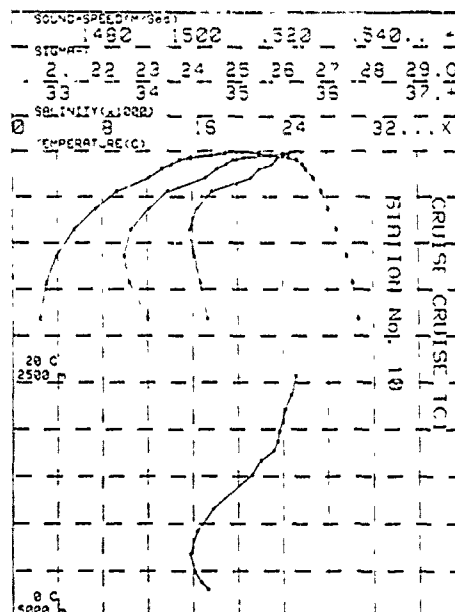
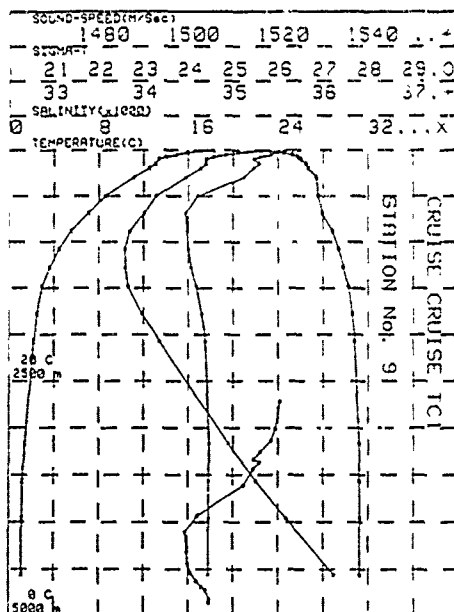
STATION 7		26.3025		152.15E		CRUISE TC1			
DATE= 11/12/83		TIME= 23150LT				DEPTH= 4810			
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S		
	°C	Pct	CL/T	ML/L	°C	W/sec			Dyn m
005	0	19.810	35.640	25.354	281.1	5.37	19.81	1521.8	
005	25	19.210	35.634	25.438	284.0	5.24	19.27	1521.9	
005	50	19.010	35.538	25.538	286.9	5.12	19.12	1522.0	
005	90	14.470	35.235	26.347	100.8	4.46	14.46	1507.7	
005	148	12.730	35.184	26.575	149.0	4.53	12.71	1502.6	
005	198	12.635	35.163	26.607	185.6	4.63	12.63	1499.5	
005	248	12.635	35.163	26.607	222.3	4.74	12.62	1496.4	
005	297	10.180	34.652	26.982	117.0	4.02	7.89	1490.3	
005	345	9.740	34.591	26.962	119.0	4.22	7.89	1490.3	
005	393	9.160	34.490	27.137	101.2	4.22	5.50	1486.2	
005	442	8.710	34.472	27.151	101.2	4.22	5.50	1486.2	
005	490	3.990	34.527	27.111	75.6	3.74	3.91	1484.2	
005	538	3.340	34.537	27.482	68.8	3.57	3.28	1484.9	
005	587	2.170	34.517	27.567	57.6	3.57	2.14	1488.0	
005	635	1.774	34.641	27.851	52.6	3.71	2.27	1489.1	
005	683	2.160	34.678	27.701	48.4	3.98	2.01	1493.2	
005	732	1.940	34.716	27.749	44.1	4.07	1.77	1497.3	
005	780	1.940	34.738	28.000	44.1	4.07	1.77	1497.3	
005	828	1.370	34.733	27.865	37.7	4.35	1.14	1506.5	
005	876	1.201	34.737	27.816	34.4	4.64	0.83	1514.7	
005	925	1.201	34.740	27.720	34.4	4.64	0.83	1514.7	
005	973	1.154	34.720	27.810	38.1	0.00	.80	1522.2	
005	1021	1.148	34.721	27.810	38.4	4.47	.79	1531.6	





STATION 9 DATE= 11/12/83										STATION 10 DATE= 12/12/83									
36.115 131.566 CRUISE TCI TIME= 03040LT DEPTH= 4646										35.455 150.486 CRUISE TCI TIME= 20360LT DEPTH= 2200									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT	TEMP	S.S	Dyn. #	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT	TEMP	S.S	Dyn. #
m	°C	Ppt	kg/m <sup>3</sup>	kg/m <sup>3</sup>	kg/m <sup>3</sup>	kg/m <sup>3</sup>	kg/m <sup>3</sup>	kg/m <sup>3</sup>	kg/m <sup>3</sup>	m	°C	Ppt	kg/m <sup>3</sup>	kg/m <sup>3</sup>	kg/m <sup>3</sup>	kg/m <sup>3</sup>	kg/m <sup>3</sup>	kg/m <sup>3</sup>	kg/m <sup>3</sup>
085	0	18.260	35.323	25.609	234.8	5.51	18.26	1517.9	0.000	085	0	20.520	35.637	25.110	284.3	5.23	20.52	1524.3	0.000
085	25	15.920	35.470	26.128	188.3	4.78	15.92	1511.3	-0.023	085	25	18.930	35.589	25.491	249.0	4.82	18.93	1520.2	-0.028
085	50	14.890	35.418	26.220	170.8	4.18	14.89	1508.4	-0.053	085	50	17.070	35.522	25.754	224.7	4.49	17.06	1517.0	-0.087
085	75	13.930	35.298	26.431	160.6	4.45	13.92	1505.5	-0.179	085	75	15.750	35.452	26.153	187.4	4.81	15.74	1511.5	-0.177
085	100	13.320	35.223	26.501	154.8	4.48	13.31	1503.9	-0.254	085	100	14.990	35.432	26.320	171.3	5.20	14.87	1509.2	-0.222
085	150	12.030	35.098	26.611	145.7	5.17	12.01	1503.8	-0.329	085	150	14.140	35.386	26.457	160.6	5.39	14.12	1507.6	-0.305
085	200	12.480	35.222	26.969	141.3	5.22	12.45	1502.7	-0.400	085	198	13.270	35.243	26.523	155.4	4.84	13.26	1505.4	-0.384
085	300	11.110	35.115	26.844	128.5	5.14	11.07	1499.4	-0.588	085	297	12.110	35.152	26.587	142.0	5.13	12.07	1502.8	-0.608
085	400	9.990	34.900	26.878	123.6	5.14	9.89	1493.7	-0.712	085	444	9.230	34.716	26.659	127.0	4.50	9.18	1484.5	-0.800
085	450	7.140	34.673	26.964	116.9	4.31	7.07	1490.2	-0.835	085	634	7.370	34.548	27.012	113.9	4.30	7.31	1480.3	-0.877
085	600	5.310	34.491	27.211	95.5	4.14	5.43	1487.0	-1.025	085	854	5.160	34.468	27.199	96.2	4.11	5.29	1468.3	-1.133
085	1078	4.430	34.499	27.342	83.0	3.90	4.34	1485.8	-1.219	085	1142	3.890	34.519	27.415	75.4	3.74	3.80	1464.7	-1.401
085	1278	3.070	34.535	27.450	72.7	3.70	3.57	1486.0	-1.401	085	1430	3.030	34.584	27.552	62.2	3.54	2.93	1485.9	-1.571
085	1481	2.990	34.591	27.560	61.7	3.50	2.98	1486.8	-1.571	085	1818	2.410	34.658	27.664	51.7	3.72	2.28	1486.9	-1.874
085	1778	2.310	34.644	27.648	53.8	3.62	2.38	1489.7	-1.874	ISL	0	20.52	35.64	25.110	284.3	5.23	20.52	1524.3	0.000
085	2074	2.230	34.686	27.703	46.5	3.90	2.08	1493.8	-2.028	ISL	10	19.84	35.62	25.278	268.8	5.08	19.84	1522.6	-0.028
085	3170	1.430	34.730	27.799	36.8	4.27	1.19	1509.0	-2.915	ISL	25	18.83	35.59	25.491	249.0	4.82	18.83	1520.2	-0.047
085	3548	1.224	34.772	27.809	37.2	4.40	0.95	1519.1	-3.177	ISL	50	17.87	35.52	25.754	224.7	4.49	17.06	1517.0	-0.087
085	3942	1.164	34.724	27.813	37.2	4.32	0.85	1521.8	-3.400	ISL	75	15.75	35.45	26.153	187.4	4.81	15.74	1511.5	-0.177
085	4557	1.184	34.722	27.811	38.5	4.50	0.78	1532.3	-3.615	ISL	100	14.99	35.43	26.320	171.3	5.20	14.87	1509.2	-0.222
ISL	0	18.26	35.32	25.609	234.8	5.51	18.26	1517.9	0.000	ISL	150	14.14	35.38	26.457	160.6	5.39	14.12	1507.6	-0.305
ISL	10	17.17	35.50	25.854	212.7	5.02	17.17	1514.8	-0.023	ISL	200	13.28	35.24	26.523	155.4	4.84	13.26	1505.4	-0.384
ISL	25	15.92	35.47	26.128	188.3	4.78	15.92	1511.3	-0.053	ISL	250	12.73	35.22	26.613	146.1	5.10	12.72	1504.4	-0.460
ISL	50	14.89	35.42	26.220	170.8	4.18	14.89	1508.4	-0.098	ISL	300	12.04	35.14	26.681	141.6	5.11	12.00	1502.7	-0.533
ISL	75	13.93	35.43	26.431	160.6	4.45	13.92	1505.5	-0.129	ISL	400	9.96	34.82	26.812	131.0	4.85	9.91	1498.5	-0.699
ISL	100	13.32	35.22	26.501	154.8	4.48	13.31	1503.9	-0.179	ISL	500	7.66	34.66	26.903	123.3	4.44	7.61	1493.2	-0.766
ISL	150	12.03	35.09	26.611	145.7	5.17	12.01	1503.8	-0.254	ISL	600	7.68	34.57	26.944	118.4	4.33	7.63	1491.0	-0.818
ISL	200	12.48	35.22	26.969	141.3	5.22	12.45	1502.7	-0.329	ISL	800	5.87	34.48	27.155	100.4	4.18	5.80	1487.1	-1.133
ISL	250	11.79	35.18	26.721	132.7	5.17	11.78	1501.1	-0.395	ISL	1000	4.58	34.49	27.318	84.7	3.90	4.49	1485.1	-1.319
ISL	300	11.11	35.11	26.844	128.5	5.14	11.07	1499.4	-0.400	ISL	1300	3.26	34.58	27.496	67.8	3.80	3.28	1485.2	-1.547
ISL	400	9.99	34.81	26.851	128.0	5.14	9.84	1495.5	-0.588	ISL	1500	2.87	34.60	27.578	56.7	3.57	2.78	1486.5	-1.674
ISL	500	8.54	34.80	26.878	125.6	5.14	8.49	1492.7	-0.712										
ISL	600	7.81	34.51	26.921	122.4	4.62	7.75	1491.4	-0.835										
ISL	800	6.13	34.48	27.127	103.1	4.22	6.08	1486.1	-1.064										
ISL	1000	4.83	34.49	27.292	87.8	3.99	4.74	1486.2	-1.254										
ISL	1200	3.58	34.54	27.484	71.3	3.87	3.48	1486.1	-1.483										
ISL	1500	2.93	34.59	27.564	61.1	3.50	2.84	1486.8	-1.625										
ISL	2000	2.30	34.68	27.690	49.7	3.84	2.13	1492.6	-1.899										
ISL	2500	1.88	34.71	27.752	43.9	4.05	1.70	1499.4	-2.134										
ISL	3000	1.53	34.73	27.790	39.8	4.21	1.31	1506.5	-2.347										
ISL	3500	1.25	34.73	27.804	37.2	4.39	0.98	1516.0	-2.540										
ISL	4000	1.18	34.72	27.812	37.2	4.32	0.84	1522.4	-2.728										
ISL	4500	1.18	34.72	27.811	38.3	4.47	0.78	1531.3	-2.915										

STATION 11				35.555 151.216 CRUISE TCI				STATION 12				35.355 151.506 CRUISE TCI							
DATE= 12/12/83				TIME= 0900LT				DATE= 12/12/83				TIME= 0929LT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT	TEMP	S.S	Dyn #	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT	TEMP	S.S	Dyn #
085	0	18.680	35.587	25.553	242.2	5.47	18.68	1518.1	0.000	085	0	19.480	35.574	25.337	282.7	5.28	19.48	1521.4	0.000
085	25	17.260	35.552	25.848	215.0	5.78	17.26	1515.8	-0.057	085	25	18.570	35.543	25.577	240.7	5.51	18.57	1519.2	-0.083
085	50	15.360	35.455	26.244	178.1	5.18	15.35	1509.9	-0.106	085	50	17.950	35.532	25.708	229.0	5.47	17.94	1517.8	-0.122
085	75	14.770	35.418	26.346	169.9	5.26	14.76	1504.4	-0.150	085	75	15.740	35.464	26.150	187.7	4.84	15.73	1511.5	-0.173
085	99	14.190	35.377	26.429	160.8	5.25	14.18	1504.8	-0.191	085	99	14.940	35.432	26.228	174.4	4.81	14.92	1509.3	-0.218
085	148	13.310	35.295	26.559	150.8	4.89	13.29	1504.7	-0.264	085	148	14.190	35.402	26.458	160.3	5.28	14.17	1507.7	-0.302
085	198	12.210	35.132	26.832	144.7	4.98	12.28	1501.9	-0.342	085	198	13.550	35.380	26.578	150.4	5.24	13.52	1505.6	-0.380
085	247	11.990	35.075	26.728	138.0	5.15	11.95	1501.0	-0.414	085	292	12.000	35.244	26.658	144.1	5.27	12.06	1504.6	-0.460
085	296	8.820	34.644	26.868	128.7	4.89	8.77	1493.7	-0.535	085	340	8.530	34.730	26.827	132.2	4.72	8.47	1489.4	-0.608
085	344	7.310	34.545	27.017	114.2	4.31	7.24	1491.1	-0.635	085	388	5.870	34.678	27.143	102.9	4.19	5.89	1488.9	-0.699
085	392	5.820	34.470	27.157	101.4	4.18	5.74	1486.4	-0.712	085	436	3.820	34.541	27.437	74.5	3.70	3.75	1486.9	-0.877
085	440	4.830	34.509	27.228	88.0	4.24	4.60	1486.5	-0.799	085	484	3.120	34.581	27.599	64.2	3.90	3.02	1487.3	-0.955
085	488	3.740	34.529	27.337	74.1	3.85	3.64	1484.9	-1.035	085	532	2.580	34.640	27.635	54.9	3.58	2.45	1480.0	-1.133
085	536	3.120	34.575	27.335	64.3	3.53	3.01	1487.3	-1.219	085	580	2.100	34.684	27.697	49.2				
085	584	2.580	34.640	27.635	54.9	3.58	2.45	1480.0	-1.133	085	628	1.510	34.744	27.760	44.6	3.42	1.47	1479.5	-1.219
085	707	2.280	34.687	27.700	49.2	3.01	2.11	1483.7	-1.302	085	676	1.020	34.799	27.815	39.8	3.00	0.98	1478.9	-1.302
085	737	2.050	34.715	27.739	45.7	2.09	1.09	1480.4	-1.380	085	725	0.820	34.827	27.847	36.0	2.82	0.82	1478.2	-1.380
085	769	1.790	34.748	27.788	41.3	2.22	1.54	1503.7	-1.460	085	754	0.510	34.859	27.896	32.2	2.82	0.51	1477.5	-1.460
085	816	1.360	34.789	27.839	36.8	2.39	1.83	1506.9	-1.540	085	802	0.210	34.891	27.945	28.4	2.82	0.21	1476.8	-1.540
085	848	1.178	34.722	27.810	37.5	2.25	1.06	1521.6	-1.620	085	852	0.120	34.923	27.994	24.6	2.82	0.12	1476.1	-1.620
085	824	1.181	34.718	27.806	38.3	2.40	1.02	1526.7	-1.700	085	876	0.030	34.955	28.043	20.8	2.82	0.03	1475.4	-1.700
085	858	1.099	34.717	27.811	38.2	2.43	1.01	1535.7	-1.780	085	900	0.040	34.987	28.092	17.0	2.82	0.04	1474.7	-1.780
151	0	18.88	35.599	25.353	242.2	5.47	18.88	1518.1	0.000	151	0	19.680	35.586	25.137	282.7	5.28	19.68	1521.4	0.000
151	10	18.23	35.58	25.658	233.0	5.08	18.24	1518.1	0.028	151	10	19.030	35.573	25.360	273.0	5.09	19.04	1521.4	0.028
151	50	15.38	35.455	26.244	178.1	5.18	15.38	1518.1	0.057	151	50	17.960	35.542	25.583	229.0	5.47	17.96	1521.4	0.057
151	50	15.38	35.455	26.244	178.1	5.18	15.38	1518.1	0.057	151	50	17.960	35.542	25.583	229.0	5.47	17.96	1521.4	0.057
151	73	14.73	35.425	26.390	168.7	5.24	14.73	1508.3	-0.190	151	73	15.680	35.452	26.183	187.7	4.84	15.68	1511.5	-0.190
151	100	14.47	35.388	26.442	160.6	5.24	14.48	1508.3	-0.210	151	100	14.940	35.432	26.228	174.4	4.81	14.92	1509.3	-0.210
151	130	13.82	35.352	26.525	152.0	4.88	13.82	1508.3	-0.260	151	130	14.690	35.402	26.458	160.3	5.28	14.69	1507.7	-0.260
151	200	12.30	35.132	26.834	144.8	4.70	12.27	1501.8	-0.342	151	200	13.550	35.380	26.578	150.4	5.24	13.52	1505.6	-0.342
151	250	11.99	35.075	26.683	141.1	4.88	11.95	1501.7	-0.414	151	250	12.990	35.344	26.658	144.1	5.27	12.97	1504.6	-0.414
151	300	11.54	35.057	26.778	137.9	5.15	11.53	1500.9	-0.448	151	300	12.540	35.308	26.758	140.3	5.24	12.52	1503.7	-0.448
151	400	10.79	34.813	26.923	128.3	5.06	10.79	1498.5	-0.535	151	400	11.790	35.272	26.907	132.2	4.72	11.79	1493.7	-0.535
151	500	9.79	34.684	26.971	128.4	4.87	9.75	1493.7	-0.748	151	500	10.790	35.236	27.052	124.4	4.72	10.79	1493.7	-0.748
151	600	8.62	34.599	26.948	120.2	4.23	7.96	1492.4	-0.871	151	600	9.620	35.200	27.101	116.6	4.84	9.62	1492.4	-0.871
151	700	7.64	34.499	26.988	107.8	4.24	6.86	1490.5	-1.099	151	700	8.620	35.164	27.150	108.8	4.84	8.62	1490.5	-1.099
151	800	5.13	34.343	27.125	91.7	3.64	5.09	1488.9	-1.299	151	800	6.130	35.128	27.200	94.0	3.64	6.13	1488.9	-1.299
151	1300	3.70	34.523	27.543	73.5	3.64	3.60	1486.5	-1.345	151	1300	4.700	35.092	27.250	64.2	3.64	4.70	1486.5	-1.345
151	1500	3.08	34.568	27.441	63.9	3.23	2.87	1487.4	-1.683	151	1500	4.080	35.138	27.300	54.9	3.23	4.08	1487.4	-1.683
151	1700	2.51	34.606	27.388	50.2	3.65	2.48	1482.7	-1.984	151	1700	3.510	35.184	27.350	45.6	3.23	3.51	1482.7	-1.984
151	2500	1.97	34.725	27.674	40.2	3.23	2.18	1470.0	-2.199	151	2500	2.970	35.230	27.400	36.0	3.23	2.97	1470.0	-2.199
151	3000	1.63	34.745	27.782	40.4	3.31	1.81	1482.0	-2.409	151	3000	2.630	35.276	27.450	36.0	3.23	2.63	1482.0	-2.409
151	3500	1.32	34.725	27.808	36.0	3.21	1.05	1503.3	-2.607	151	3500	2.320	35.322	27.500	36.0	3.23	2.32	1503.3	-2.607
151	4000	1.17	34.725	27.807	37.7	4.26	1.08	1522.3	-2.787	151	4000	2.170	35.368	27.550	36.0	3.23	2.17	1522.3	-2.787
151	4500	1.14	34.725	27.807	36.0	3.23	1.08	1522.3	-2.787	151	4500	2.170	35.368	27.550	36.0	3.23	2.17	1522.3	-2.787



Cruise RANRL 1/84 (SEAMAP 1)

*Notes for cruise RANRL 1/84 (SEAMAP 1)*

No remarks.

*Other sources of data for cruise RANRL 1/84 (SEAMAP 1)*

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"Temperature Inversions at Intermediate Depths in the Antarctic Intermediate Waters of the South-west Pacific".

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Contains XBT cross-sections, satellite SST fields, geostrophic current profiles, surface samples, thermo-salinograph data, wind vectors, sea state and swell height diagrams, along the cruise track.

Jenkins, C.J. (1985)

"Geological/Geophysical Results of the SEAMAP 1 (COOK 1/84) Cruise, With Derived Geoacoustic Models: South Tasman Sea and New Zealand regions".

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Scott, B.D. (1984)

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(Unpublished document). A narrative of the actual cruise

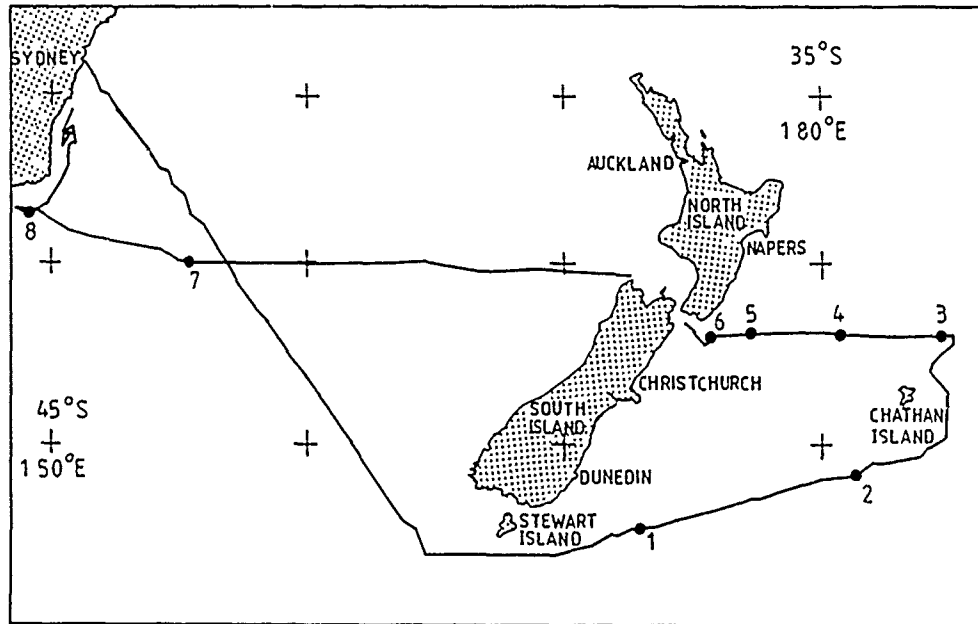


Figure 9. Nansen station positions for cruise RANRL 1/84 (SEAMAP 1)

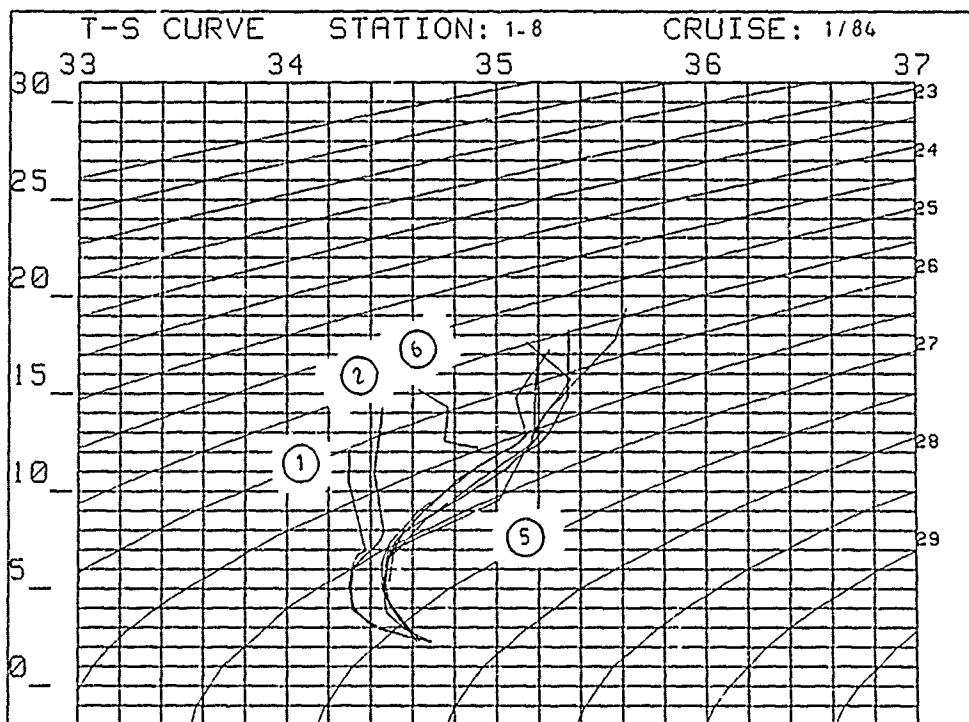


Figure 10. Temperature-salinity curves for cruise RANRL 1/84 (SEAMAP 1)

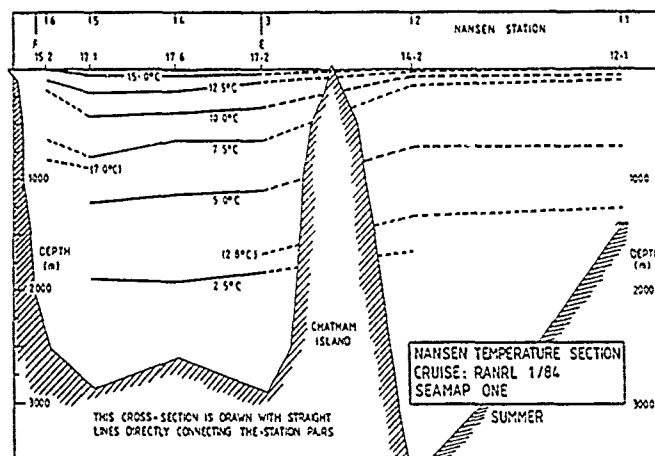


Figure 11. Temperature cross-section about Chatham Rise in January 1984 for survey RANRL 1/84 (SEAMAP 1)

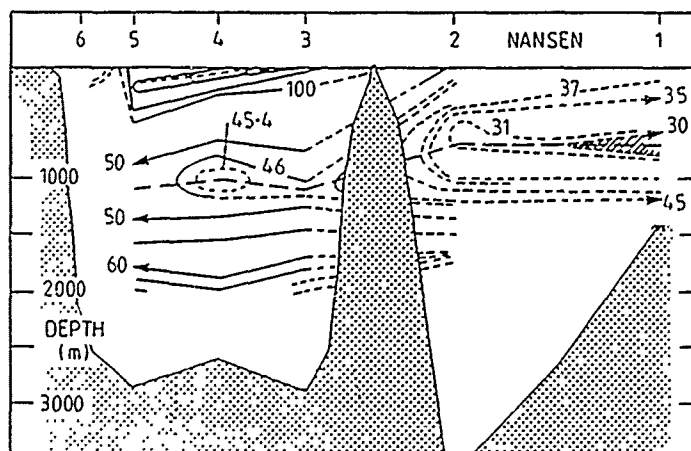


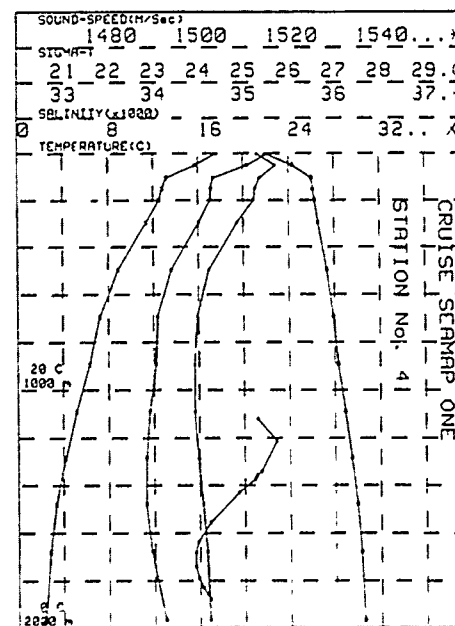
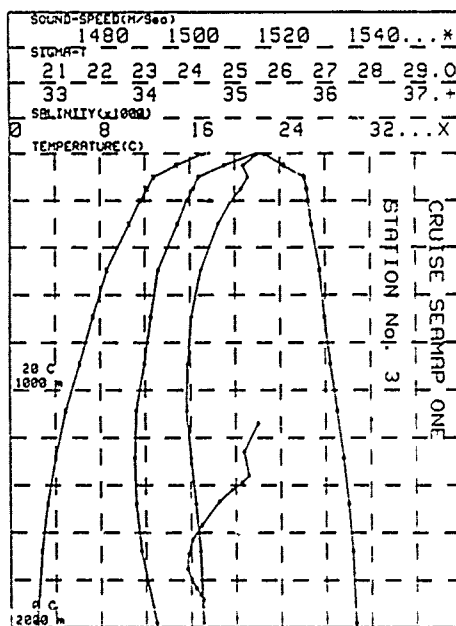
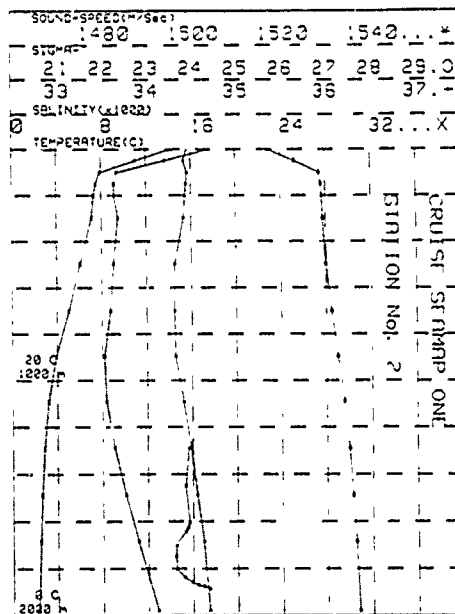
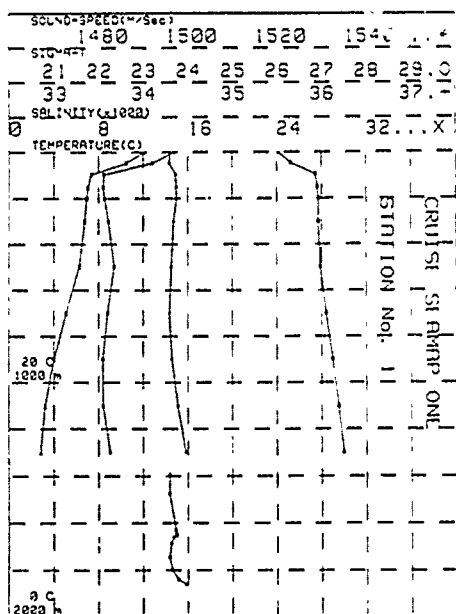
Figure 12. Salinity cross-section about Chatham Rise in January 1984 for survey RANRL 1/84 (SEAMAP 1)

STATION 1 DATE= 31/01/84									
47.175 173.04E TIME= 2105GMT									
SEANAP ONE DEPTH= 1400									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	POT	TEMP	S.S
m	°C	Pct	kg/m <sup>3</sup>	°C	g/cm <sup>3</sup>	g/cm <sup>3</sup>	°C	°C	g/cm <sup>3</sup>
0	12.07	34.299	26.032	196.7	0.00	12.07	1496.8	0.000	
005	48	14.500	34.295	26.038	170.7	0.00	10.49	1492.1	
005	97	7.500	34.305	26.068	118.6	0.00	7.33	1481.2	
005	152	7.070	34.372	26.915	115.2	0.00	7.08	1481.0	
005	202	6.950	34.378	26.934	114.1	0.00	6.83	1481.4	
005	302	6.770	34.340	26.930	113.8	0.00	6.74	1482.2	
005	498	6.280	34.313	26.978	113.9	0.00	6.24	1483.5	
005	701	5.090	34.295	27.106	102.6	0.00	5.03	1482.0	
005	900	4.020	34.322	27.245	89.3	0.00	3.85	1480.9	
005	1103	3.220	34.388	27.378	78.9	0.00	3.14	1481.0	
005	1300	2.790	34.477	27.487	68.7	0.00	2.70	1482.8	
ISL	0	12.07	34.30	26.032	196.7	0.00	12.07	1496.8	0.000
ISL	10	11.87	34.30	26.070	193.3	0.00	11.88	1496.3	.019
ISL	25	11.44	34.30	26.148	186.2	0.00	11.44	1499.1	.047
ISL	50	10.32	34.30	26.348	187.7	0.00	10.31	1491.4	.082
ISL	75	8.43	34.34	26.680	136.5	0.00	8.43	1484.9	.120
ISL	100	7.34	34.37	26.872	118.6	0.00	7.33	1481.2	.163
ISL	150	7.08	34.37	26.913	115.3	0.00	7.08	1481.0	.221
ISL	200	6.95	34.38	26.934	114.1	0.00	6.94	1481.3	.279
ISL	250	6.87	34.36	26.932	113.2	0.00	6.85	1481.6	.336
ISL	300	6.77	34.34	26.931	113.8	0.00	6.75	1482.2	.393
ISL	400	6.43	34.33	26.943	114.9	0.00	6.37	1482.2	.509
ISL	500	6.27	34.31	26.978	113.9	0.00	6.23	1483.5	.623
ISL	600	5.87	34.30	27.040	106.3	0.00	5.62	1482.7	.734
ISL	800	4.52	34.30	27.178	96.0	0.00	4.48	1481.3	.929
ISL	1000	3.58	34.35	27.312	83.9	0.00	3.51	1481.0	1.118
ISL	1300	2.79	34.48	27.487	68.7	0.00	2.70	1482.6	1.342

STATION 2 DATE= 03/02/84									
49.45E 178.32W TIME= 0001GMT									
SEANAP ONE DEPTH= 4123									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	POT	TEMP	S.S
m	°C	Pct	kg/m <sup>3</sup>	°C	g/cm <sup>3</sup>	g/cm <sup>3</sup>	°C	°C	g/cm <sup>3</sup>
0	14.210	34.457	25.724	223.9	0.00	14.21	1504.2	0.000	
005	50	11.030	34.418	26.317	170.7	0.00	11.02	1494.2	
005	101	7.880	34.481	26.887	119.1	0.00	7.88	1483.5	
005	151	7.120	34.447	26.910	113.8	0.00	7.11	1482.6	
005	202	7.320	34.433	26.928	114.9	0.00	7.30	1482.9	
005	300	7.120	34.415	26.942	115.0	0.00	7.09	1483.7	
005	438	6.070	34.311	26.999	111.4	0.00	6.03	1482.7	
005	702	5.040	34.305	27.120	101.2	0.00	4.98	1481.8	
005	887	3.930	34.313	27.247	89.1	0.00	3.88	1480.3	
005	1092	3.220	34.402	27.387	73.8	0.00	3.14	1480.9	
005	1291	2.830	34.484	27.498	64.5	0.00	2.74	1482.6	
005	1499	2.600	34.551	27.583	50.1	0.00	2.50	1485.1	
005	1685	2.440	34.622	27.631	34.3	0.00	2.34	1487.9	
005	1878	2.260	34.683	27.687	48.8	0.00	2.12	1482.1	
ISL	0	14.21	34.46	25.724	223.9	0.00	14.21	1504.2	0.000
ISL	10	13.57	34.44	25.847	214.5	0.00	13.58	1502.2	.022
ISL	25	12.81	34.43	26.027	197.7	0.00	12.80	1497.2	.053
ISL	50	11.03	34.42	26.317	170.7	0.00	11.02	1494.2	.099
ISL	75	9.14	34.45	26.651	136.3	0.00	9.13	1487.6	.129
ISL	100	7.92	34.46	26.881	119.7	0.00	7.91	1483.6	.172
ISL	150	7.33	34.45	26.929	115.8	0.00	7.31	1482.8	.231
ISL	200	7.33	34.43	26.937	114.9	0.00	7.31	1482.9	.288
ISL	250	7.25	34.43	26.933	114.9	0.00	7.22	1483.4	.348
ISL	300	7.12	34.42	26.942	115.0	0.00	7.09	1483.7	.403
ISL	400	6.58	34.35	26.984	114.0	0.00	6.55	1483.1	.517
ISL	500	6.04	34.31	27.001	111.4	0.00	6.02	1482.8	.630
ISL	600	5.57	34.31	27.058	106.4	0.00	5.52	1482.3	.729
ISL	800	4.43	34.31	27.182	95.3	0.00	4.37	1480.9	.841
ISL	1000	3.51	34.38	27.328	81.3	0.00	3.44	1480.5	1.118
ISL	1300	2.82	34.49	27.492	66.2	0.00	2.73	1482.7	1.338
ISL	1500	2.59	34.58	27.587	59.7	0.00	2.49	1489.2	1.484

STATION 3 DATE= 03/02/84									
41.595 175.07W TIME= 2135GMT									
SEANAP ONE DEPTH= 2808									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	POT	TEMP	S.S
m	°C	Pct	kg/m <sup>3</sup>	°C	g/cm <sup>3</sup>	g/cm <sup>3</sup>	°C	°C	g/cm <sup>3</sup>
0	17.190	35.250	25.642	231.8	0.00	17.19	1514.4	0.000	
005	50	14.800	35.082	26.087	192.8	0.00	14.79	1507.7	
005	100	12.800	35.143	26.344	150.6	0.00	12.79	1502.0	
005	150	12.230	35.070	26.600	144.9	0.00	12.21	1500.8	
005	200	11.810	34.981	26.833	144.4	0.00	11.58	1499.4	
005	300	10.810	34.816	26.703	139.7	0.00	10.57	1497.3	
005	498	8.620	34.620	26.421	123.3	0.00	8.57	1492.9	
005	683	7.290	34.515	26.182	117.6	0.00	7.32	1491.4	
005	889	6.200	34.470	27.058	106.8	0.00	6.12	1489.9	
005	1087	4.930	34.458	27.254	92.6	0.00	4.84	1488.0	
005	1288	4.020	34.501	27.390	78.3	0.00	3.92	1487.8	
005	1479	3.390	34.556	27.503	66.1	0.00	3.19	1487.9	
005	1679	2.780	34.503	27.590	59.3	0.00	2.64	1489.0	
005	1942	2.330	34.633	27.651	53.4	0.00	2.19	1482.4	
ISL	0	17.19	35.25	25.642	231.8	0.00	17.19	1514.4	0.000
ISL	10	16.68	35.20	25.744	224.3	0.00	16.68	1513.0	.023
ISL	25	15.95	35.14	25.871	212.7	0.00	15.84	1510.9	.058
ISL	50	14.80	35.09	26.087	192.8	0.00	14.79	1507.7	.108
ISL	75	13.82	35.13	26.346	187.0	0.00	13.81	1504.3	.152
ISL	100	12.80	35.14	26.544	150.6	0.00	12.78	1502.0	.182
ISL	150	12.23	35.07	26.800	144.9	0.00	12.21	1500.8	.284
ISL	200	11.81	34.98	26.833	144.4	0.00	11.58	1499.4	.339
ISL	250	11.11	34.88	26.664	142.3	0.00	11.08	1498.3	.411
ISL	300	10.81	34.82	26.703	139.7	0.00	10.57	1497.3	.481
ISL	400	9.50	34.70	26.803	131.5	0.00	9.45	1494.7	.617
ISL	500	8.58	34.62	26.883	125.2	0.00	8.54	1492.9	.748
ISL	600	7.87	34.58	26.931	121.7	0.00	7.90	1492.1	.869
ISL	800	6.75	34.49	27.048	112.0	0.00	6.67	1490.6	1.103
ISL	1000	5.44	34.46	27.193	96.7	0.00	5.38	1488.6	1.314
ISL	1300	3.98	34.51	27.299	78.4	0.00	3.88	1487.6	1.579
ISL	1500	3.23	34.55	27.314	67.0	0.00	3.12	1486.0	1.725

STATION 4				41.555	178.55W	SEANAP ONE		DEPTH= 2190	
DATE= 07/02/84				TIME= 0004GMT					
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	POT	TEMP	S.S
	°C	Pct	kg/m <sup>3</sup>	°C	g/cm <sup>3</sup>	g/cm <sup>3</sup>	°C	°C	g/cm <sup>3</sup>
0005	0	17.390	35.145	25.485	248.7	0.00	0.00	17.59	1515.3
0005	51	15.710	35.254	26.387	193.0	0.00	0.00	15.70	1510.9
0005	105	13.150	35.181	26.504	154.7	0.00	0.00	13.14	1503.3
0005	150	12.810	35.190	26.532	153.1	0.00	0.00	12.79	1502.9
0005	199	12.530	35.118	26.575	150.2	0.00	0.00	12.50	1502.7
0005	297	11.390	34.832	26.652	144.9	0.00	0.00	11.35	1500.1
0005	487	8.870	34.617	26.839	129.5	0.00	0.00	8.82	1493.9
0005	684	7.270	34.484	26.975	118.1	0.00	0.00	7.20	1490.9
0005	883	6.340	34.454	27.078	109.8	0.00	0.00	6.28	1490.5
0005	1090	5.180	34.454	27.222	96.2	0.00	0.00	5.09	1489.1
0005	1288	4.190	34.489	27.300	82.8	0.00	0.00	4.09	1488.2
0005	1478	3.380	34.537	27.480	70.4	0.00	0.00	3.27	1488.2
0005	1679	2.860	34.581	27.583	62.1	0.00	0.00	2.74	1489.4
0005	1948	2.400	34.611	27.627	55.8	0.00	0.00	2.28	1482.4
ISL	0	17.59	35.14	25.485	248.7	0.00	0.00	17.59	1515.3
ISL	10	17.28	35.21	25.618	236.3	0.00	0.00	17.26	1514.8
ISL	25	16.73	35.29	25.805	219.0	0.00	0.00	16.73	1513.5
ISL	50	15.70	35.37	25.978	193.0	0.00	0.00	15.69	1510.9
ISL	75	14.28	35.28	26.324	171.1	0.00	0.00	14.27	1508.6
ISL	100	13.28	35.19	26.482	156.6	0.00	0.00	13.27	1503.9
ISL	150	12.61	35.13	26.532	133.1	0.00	0.00	12.79	1502.9
ISL	200	12.52	35.18	26.578	150.2	0.00	0.00	12.52	1502.7
ISL	250	11.94	35.02	26.618	147.8	0.00	0.00	11.91	1501.4
ISL	300	11.35	34.93	26.655	144.9	0.00	0.00	11.31	1500.0
ISL	400	9.86	34.47	26.755	136.5	0.00	0.00	9.83	1496.5
ISL	500	8.81	34.42	26.823	129.3	0.00	0.00	8.78	1493.9
ISL	600	7.95	34.53	26.814	123.2	0.00	0.00	7.96	1492.0
ISL	700	6.80	34.48	27.024	114.4	0.00	0.00	6.73	1490.8
ISL	1000	5.08	34.49	27.151	102.5	0.00	0.00	5.00	1488.0
ISL	1500	3.42	34.49	27.479	81.6	0.00	0.00	3.32	1483.0
ISL	2000	3.32	34.45	27.494	64.4	0.00	1.20	1480.3	1.780



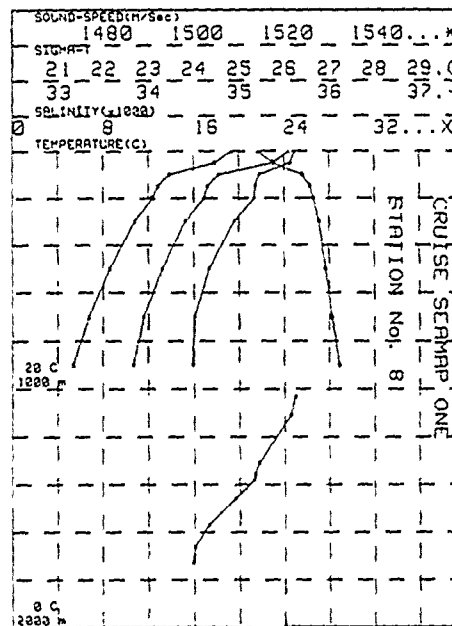
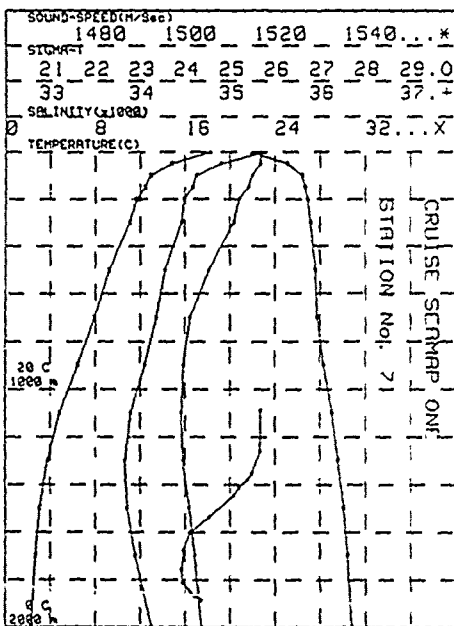
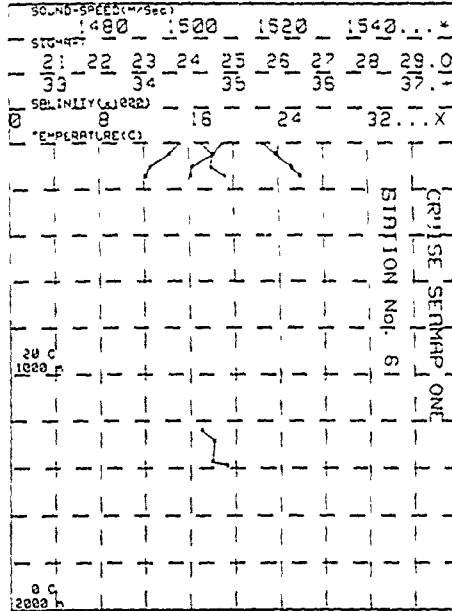
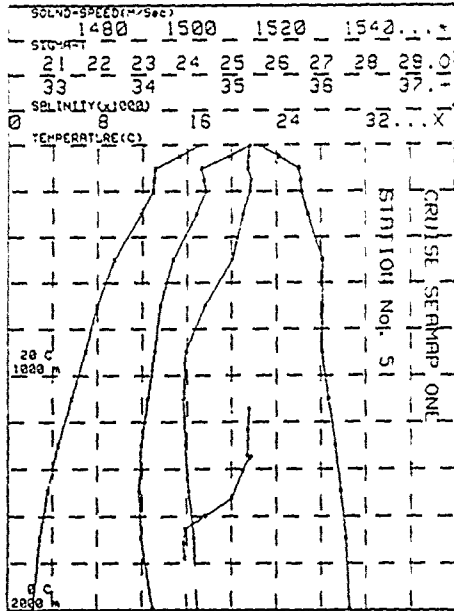


STATION 5 DATE= 8/2/84									
42.045 177.31E SEANAP ONE DEPTH= 2860									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT	TEMP	S.S	Dyn #
m	°C	Ppt	kg/L	°C	°C	°C	°C	kg/L	
0	17.110	35.199	25.642	233.7	0.00	17.11	1514.1	0.000	
10	15.300	35.187	25.651	196.4	0.00	15.29	1508.4		
103	13.140	35.181	25.504	154.3	0.00	13.13	1503.3		
132	13.060	35.223	26.354	151.1	0.00	13.04	1533.6		
202	12.940	35.206	26.345	151.4	0.00	12.91	1534.2		
302	11.660	35.127	26.715	139.3	0.00	11.62	1502.1		
500	9.530	35.009	27.039	111.3	0.00	9.47	1496.9		
701	8.010	34.708	27.043	112.9	0.00	7.94	1484.1		
898	6.910	34.483	27.024	116.0	0.00	6.82	1492.8		
1101	5.800	34.465	27.199	102.5	0.00	5.59	1481.3		
1299	4.490	34.481	27.321	87.3	0.00	4.36	1489.8		
1484	3.600	34.523	27.449	74.2	0.00	3.48	1489.4		
1684	2.880	34.575	27.565	62.2	0.00	2.78	1489.9		
1953	2.300	34.620	27.643	54.0	0.00	2.18	1482.4		
ISL 0	17.11	35.20	25.642	233.7	0.00	17.11	1514.1	0.000	
ISL 10	16.77	35.20	25.722	228.4	0.00	16.76	1513.3	.023	
ISL 25	16.23	35.19	25.844	215.3	0.00	16.23	1511.9	.058	
ISL 50	15.30	35.19	26.051	196.4	0.00	15.29	1508.4	.106	
ISL 75	14.01	35.18	26.317	171.6	0.00	14.00	1505.6	.134	
ISL 100	13.20	35.18	26.481	155.8	0.00	13.19	1503.4	.166	
ISL 150	12.04	35.22	26.553	131.2	0.00	12.04	1503.8	.272	
ISL 200	12.95	35.21	26.564	131.4	0.00	12.92	1504.2	.348	
ISL 250	12.43	35.17	26.636	145.7	0.00	12.40	1503.3	.422	
ISL 300	11.66	35.13	26.712	139.3	0.00	11.64	1502.2	.464	
ISL 400	10.60	35.06	26.815	121.9	0.00	10.55	1499.2	.626	
ISL 500	9.53	35.01	27.039	111.5	0.00	9.47	1496.9	.745	
ISL 600	8.72	34.83	27.041	112.0	0.00	8.66	1493.3	.856	
ISL 800	7.47	34.57	27.034	114.5	0.00	7.29	1493.5	1.043	
ISL 1000	6.30	34.47	27.095	109.5	0.00	6.20	1482.1	1.310	
ISL 1300	4.48	34.48	27.322	87.2	0.00	4.38	1489.8	1.606	
ISL 1500	3.37	34.53	27.453	73.8	0.00	3.48	1489.4	1.767	

STATION 7 DATE= 16/02/84									
40.015 155.28E SEANAP ONE DEPTH= 4605									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT	TEMP	S.S	Dyn #
m	°C	Ppt	kg/L	°C	°C	°C	°C	kg/L	
0	18.250	35.349	25.475	249.5	0.00	18.25	1517.8	0.000	
10	16.250	35.338	26.278	175.0	0.00	16.25	1508.0		
100	12.920	35.247	26.601	145.3	0.00	12.91	1502.6		
150	12.440	35.203	26.662	140.7	0.00	12.42	1501.7		
200	11.710	35.096	26.721	134.2	0.00	11.68	1499.9		
300	11.100	35.043	26.791	131.6	0.00	11.06	1498.3		
500	9.200	34.768	26.895	124.7	0.00	9.20	1495.6		
700	7.830	34.558	26.936	122.9	0.00	7.86	1493.6		
897	6.460	34.482	27.084	108.5	0.00	6.38	1491.0		
1097	4.860	34.483	27.246	91.4	0.00	4.77	1487.9		
1297	3.750	34.476	27.395	78.1	0.00	3.65	1486.6		
1497	3.040	34.548	27.521	65.6	0.00	2.93	1487.1		
1687	2.650	34.612	27.607	57.4	0.00	2.53	1486.8		
1956	2.300	34.685	27.695	49.3	0.00	2.18	1482.5		
ISL 0	18.25	35.34	25.475	249.5	0.00	18.25	1517.8	0.000	
ISL 10	17.44	35.34	25.674	231.0	0.00	17.44	1515.4	.024	
ISL 25	16.24	35.34	25.935	204.6	0.00	16.23	1512.3	.058	
ISL 50	14.81	35.34	26.278	175.0	0.00	14.80	1508.0	.106	
ISL 75	13.66	35.29	26.471	157.0	0.00	13.66	1504.7	.148	
ISL 100	12.82	35.25	26.601	145.3	0.00	12.81	1502.6	.186	
ISL 150	12.44	35.20	26.662	140.7	0.00	12.42	1501.7	.258	
ISL 200	11.71	35.10	26.721	134.2	0.00	11.68	1499.9	.327	
ISL 250	11.43	35.06	26.758	133.6	0.00	11.40	1499.7	.394	
ISL 300	11.10	35.04	26.781	131.6	0.00	11.06	1499.3	.461	
ISL 400	10.12	34.99	26.851	127.5	0.00	10.07	1497.2	.581	
ISL 500	8.28	34.77	26.895	124.7	0.00	8.29	1495.6	.717	
ISL 600	8.42	34.64	26.902	123.6	0.00	8.33	1494.7	.841	
ISL 800	7.29	34.51	27.007	116.6	0.00	7.12	1492.4	1.084	
ISL 1000	5.37	34.47	27.184	99.6	0.00	5.48	1489.2	1.302	
ISL 1300	3.78	34.48	27.387	77.9	0.00	3.64	1486.6	1.548	
ISL 1500	3.03	34.55	27.522	65.4	0.00	2.92	1487.1	1.710	

STATION 8 DATE= 06/02/84									
42.088 175.40E SEANAP ONE DEPTH= 2532									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT	TEMP	S.S	Dyn #
m	°C	Ppt	kg/L	°C	°C	°C	°C	kg/L	
0	15.180	34.830	25.648	233.1	0.00	15.18	1507.3		
50	14.270	34.766	25.931	205.7	0.00	14.26	1505.6		
109	12.540	34.750	26.291	174.7	0.00	12.53	1500.7		
144	12.210	34.909	26.478	157.9	0.00	12.19	1500.4		
ISL 0	15.18	34.83	25.648	233.1	0.00	15.18	1507.3	0.000	
ISL 10	15.05	34.87	25.708	227.7	0.00	15.05	1507.3	.023	
ISL 25	14.80	34.72	25.799	218.5	0.00	14.80	1506.8	.057	
ISL 50	14.27	34.77	25.951	205.7	0.00	14.26	1505.6	.110	
ISL 75	13.30	34.76	26.117	190.8	0.00	13.29	1502.7	.158	
ISL 100	12.64	34.75	26.264	177.2	0.00	12.62	1501.0	.206	

STATION 8 DATE= 18/2/84									
38.375 148.52E SEANAP ONE DEPTH= 2755									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT	TEMP	S.S	Dyn #
m	°C	Ppt	kg/L	°C	°C	°C	°C	kg/L	
0	19.320	35.618	25.412	255.5	0.00	19.32	1521.0	0.000	
50	17.800	35.568	26.756	224.4	0.00	17.79	1517.4		
100	13.810	35.219	26.287	164.8	0.00	13.80	1505.5		
150	12.830	35.173	26.562	150.3	0.00	12.81	1503.0		
200	12.300	35.164	26.642	143.9	0.00	12.28	1502.3		
300	10.820	34.893	26.770	133.4	0.00	10.78	1498.2		
500	8.620	34.647	26.918	121.9	0.00	8.57	1493.1		
700	6.770	34.507	27.062	106.3	0.00	6.70	1488.0		
900	5.380	34.483	27.221	94.6	0.00	5.30	1486.8		
ISL 0	19.32	35.62	25.412	255.5	0.00	19.32	1521.0	0.000	
ISL 10	19.21	35.61	25.458	251.6	0.00	19.21	1520.9	.025	
ISL 25	18.87	35.59	25.548	243.5	0.00	18.86	1520.2	.062	
ISL 50	17.80	35.57	25.756	224.4	0.00	17.79	1517.4	.120	
ISL 75	15.43	35.36	26.137	186.9	0.00	15.42	1510.3	.172	
ISL 100	13.81	35.22	26.297	164.8	0.00	13.80	1505.5	.217	
ISL 150	12.83	35.17	26.562	150.3	0.00	12.81	1503.0	.270	
ISL 200	12.30	35.16	26.642	143.9	0.00	12.28	1502.3	.320	
ISL 250	11.37	35.05	26.711	138.3	0.00	11.33	1500.1	.440	
ISL 300	10.82	34.95	26.770	133.4	0.00	10.78	1498.2	.508	
ISL 400	9.68	34.79	26.844	127.8	0.00	9.63	1495.5	.639	
ISL 500	8.62	34.67	26.918	121.9	0.00	8.57	1493.1	.764	
ISL 600	7.64	34.57	26.946	115.9	0.00	7.58	1490.6	.882	
ISL 800	6.02	34.48	27.140	102.2	0.00	5.95	1487.7	1.100	



## Cruise RANRL 24/83

*Notes for cruise RANRL 24/83*

Jeffrey (1984) gives data listings for the 6 stations taken on this cruise. See 'Other sources of data for cruise RANRL 30/82' on page 10. The data has been reworked for the listings in the present document, leading to a revision of some data given by Jeffrey.

*Additional Nansen data for cruise RANRL 24/83*

Depth (m)	T	S	
165	13.02	(35.39)	Station 1
35 ± 10	13.97	34.78	Station 4
?	13.93	34.79	Station 4
35	13.74	34.80	Pretrip values of unknown quantity
79	12.43	34.88	
123	11.51	35.07	

The bottle shown as being 17 m for station 4 actually lies somewhere between 12 and 22 m ( $17 \pm 5$ ). Since the Nansen data and XBT # 31 (1700Z) show it to be in a mixed layer, it is assumed to be a good value.

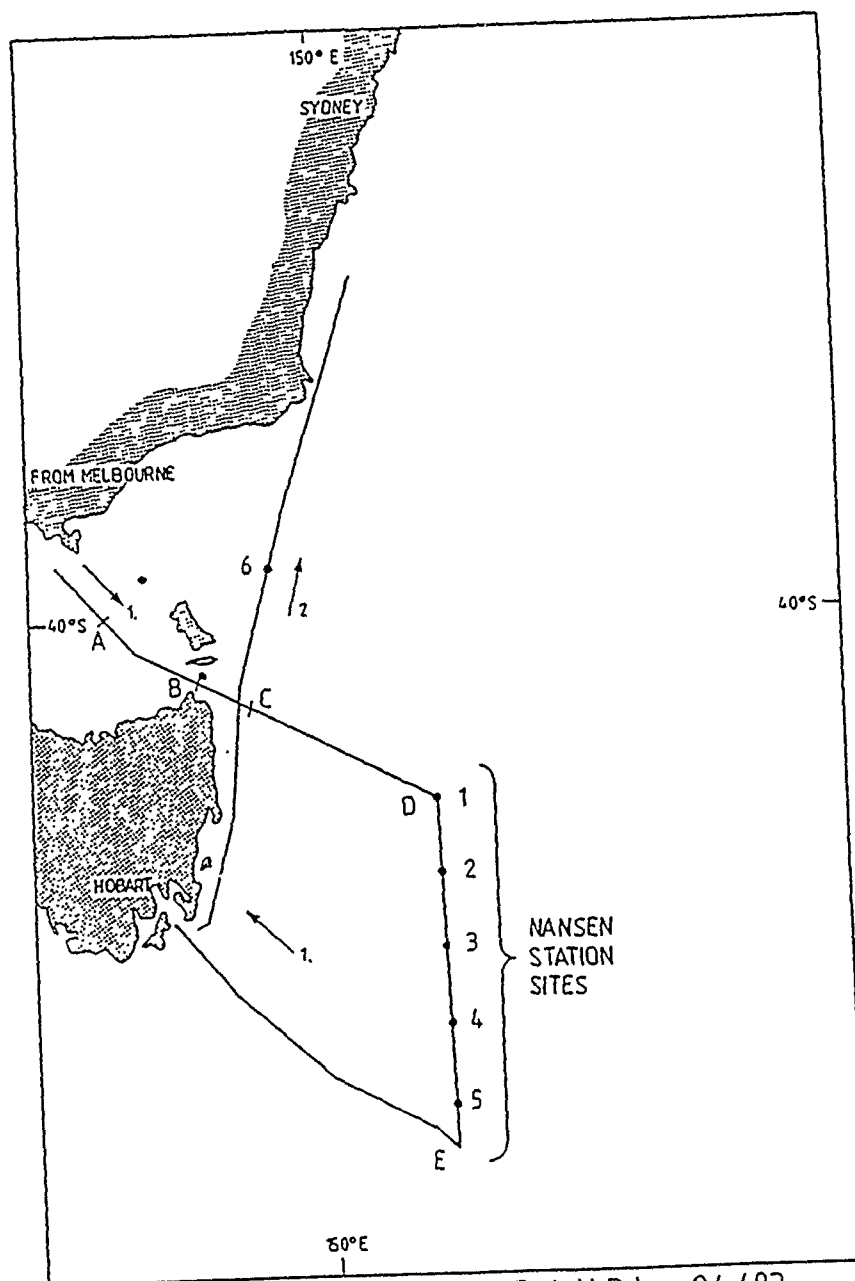
Jeffrey (1984) experienced difficulty in obtaining consistent conductivity readings for some samples, and this is reflected as minor salinity irregularities in the tables (at the surface for stations 5 and 6). The surface values at stations 5 and 6 were artificially adjusted, but deeper suspect values are not included in the present report. Contamination of samples by salps appeared to be the cause.

*Other sources of data for cruise RANRL 24/83*

Hamilton, L.J. and Schneider, P. (1984)

"Cruise Leaders Report for RANRL Cruise 24/83 18 February to 5 March 1984 on HMAS Kimbla". (Unpublished document). A narrative of the actual cruise.

Also see other sources of data for cruise RANRL 30/82.



Rough cruise track R.A.N.R.L. 24/83.  
Leg 1. 18-26 February, 1984.  
Leg 2. 29 February - 5 March, 1984.

Figure 13. Nansen station positions for survey RANRL 24/83

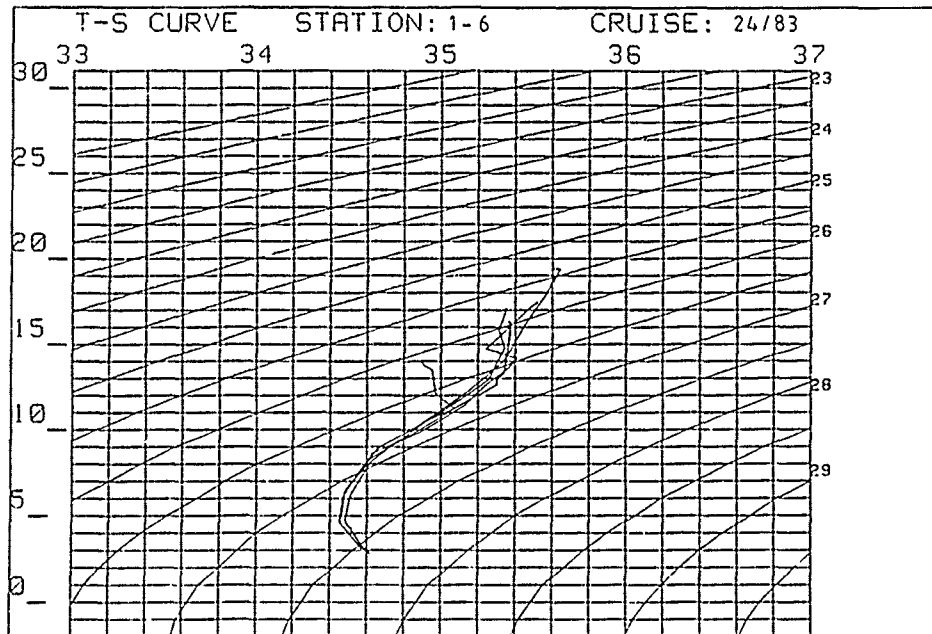
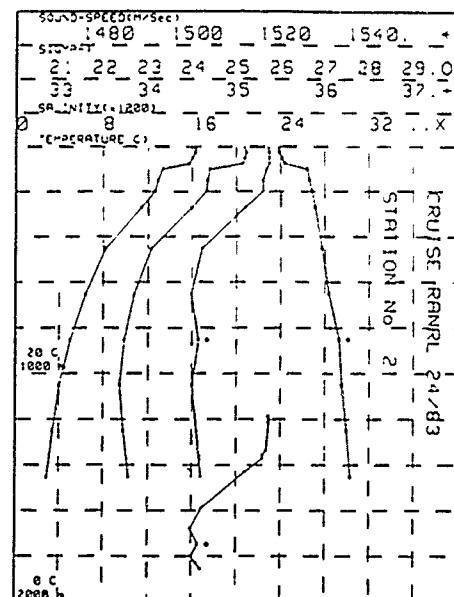
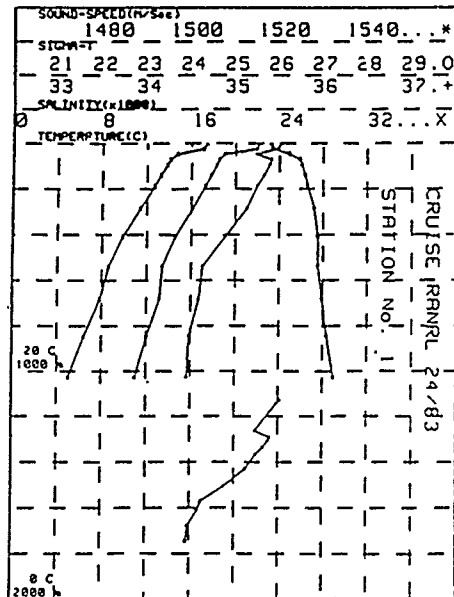


Figure 14. Temperature-salinity curves for Cruise RANRL 24/83



STATION 1		41.595	151.326	RANRL 24/83		4500		
DATE= 21/02/1984		TIME= 2028 LOCAL		DEPTH=		4500		
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT. TEMP	S.S	Dyn. B
m	°C	PPT	kg/m³	°C	°C	°C	kg/m³	kg/m³
0	17.43	35.52	25.811	217.6	0.00	17.43	1515.5	0.000
25	17.13	35.480	25.833	214.5	0.00	17.13	1514.9	
47	16.140	35.243	26.215	190.7	0.00	16.14	1507.6	
71	14.170	35.410	26.449	157.2	0.00	14.18	1504.4	
94	13.680	35.290	26.515	153.5	0.00	13.67	1505.8	
140	13.290	35.330	26.590	147.4	0.00	13.27	1504.5	
185	12.710	35.250	26.645	143.3	0.00	12.66	1503.2	
284	11.430	35.130	26.796	129.8	0.00	11.39	1500.3	
406	9.680	34.890	26.887	124.2	0.00	9.63	1496.5	
536	8.610	34.630	26.890	125.2	0.00	8.55	1483.6	
681	7.830	34.390	26.977	118.5	0.00	7.78	1483.0	
844	6.440	34.480	27.065	108.7	0.00	6.38	1480.1	
1028	5.080	34.480	27.240	93.5	0.00	4.97	1467.6	
151	17.43	35.52	25.811	217.6	0.00	17.43	1515.5	0.000
151	17.31	35.50	25.828	216.3	0.00	17.30	1515.2	.022
151	18.29	35.44	25.871	212.8	0.00	18.96	1514.5	.054
151	16.05	35.27	26.258	178.8	0.00	16.65	1507.4	.103
151	14.12	35.41	26.477	156.5	0.00	14.11	1506.3	.144
151	13.00	35.34	26.528	152.6	0.00	13.78	1505.7	.183
151	13.16	35.31	26.602	146.8	0.00	13.14	1504.9	.237
151	12.51	35.24	26.673	141.0	0.00	12.49	1502.9	.330
151	11.87	35.18	26.754	134.3	0.00	11.83	1501.3	.399
151	11.21	35.10	26.814	125.5	0.00	11.17	1499.8	.440
151	9.97	34.91	26.864	124.4	0.00	9.82	1496.7	.582
151	8.83	34.66	26.888	124.9	0.00	8.67	1484.2	.718
151	8.32	34.62	26.927	122.5	0.00	8.26	1483.5	.841
151	6.80	34.50	27.053	111.8	0.00	6.72	1460.8	1.075
151	5.28	34.46	27.214	96.1	0.00	5.17	1467.9	1.283

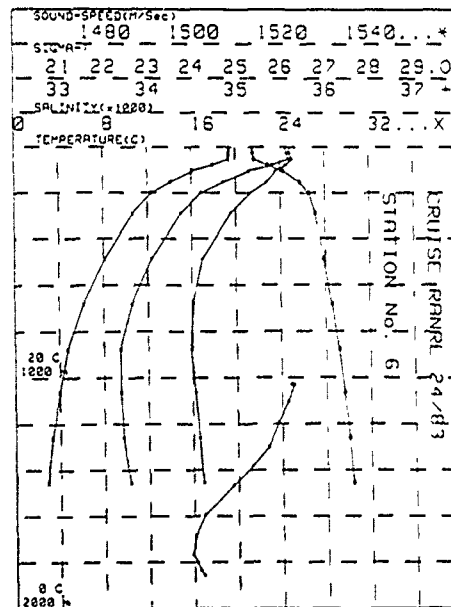
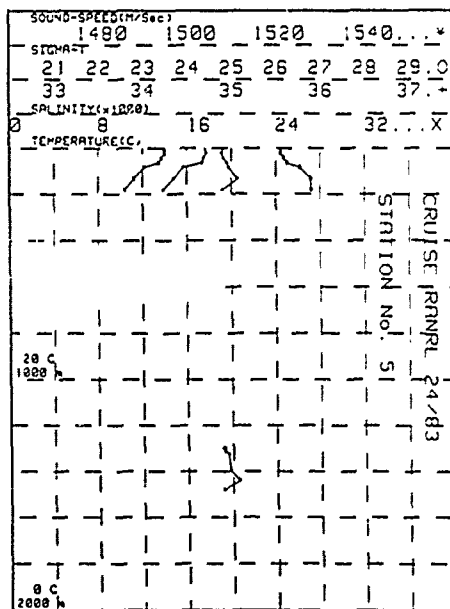
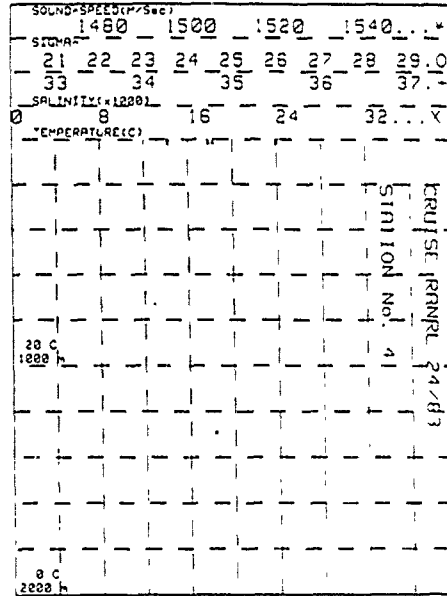
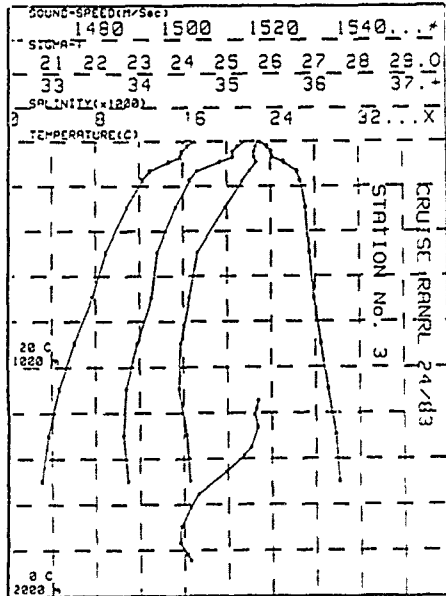
STATION 2		42.515	151.296	RANRL 24/83		4500		
DATE= 22/02/84		TIME= 0626 LOCAL		DEPTH=		4500		
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT. TEMP	S.S	Dyn. B
m	°C	PPT	kg/m³	°C	°C	°C	kg/m³	kg/m³
0	18.290	35.380	25.959	203.6	0.00	18.29	1511.8	
25	18.290	35.370	25.964	203.7	0.00	18.29	1512.3	
50	18.040	35.370	26.024	199.0	0.00	18.03	1511.9	
75	15.750	35.370	26.090	183.4	0.00	15.74	1511.4	
100	13.300	35.340	26.196	145.8	0.00	13.29	1503.9	
140	12.900	35.300	26.646	142.3	0.00	12.86	1503.4	
196	12.610	35.200	26.704	138.0	0.00	12.58	1503.2	
270	11.410	35.100	26.779	132.3	0.00	11.38	1500.0	
452	8.240	34.610	26.832	119.4	0.00	8.19	1490.8	
652	6.450	34.490	27.082	105.4	0.00	6.39	1487.0	
852	5.050	34.370	27.329	83.3	0.00	4.96	1464.7	
1050	4.030	34.500	27.383	77.7	0.00	3.95	1463.7	
1251	3.423	34.550	27.466	66.3	0.00	3.33	1464.6	
1453	2.880	34.600	27.578	59.7	0.00	2.76	1465.6	
151	18.29	35.38	25.959	203.6	0.00	18.29	1511.8	0.000
151	18.29	35.37	25.962	203.6	0.00	18.29	1512.1	.020
151	18.29	35.37	25.964	203.7	0.00	18.29	1512.3	.051
151	16.04	35.37	26.024	199.0	0.00	16.03	1511.9	.101
151	15.75	35.37	26.090	183.4	0.00	15.74	1511.4	.150
151	13.30	35.34	26.196	145.8	0.00	13.29	1503.9	.183
151	12.90	35.30	26.647	142.2	0.00	12.86	1503.4	.295
151	12.58	35.29	26.706	137.8	0.00	12.55	1503.1	.335
151	11.75	35.18	26.759	133.8	0.00	11.71	1500.9	.403
151	10.78	34.99	26.804	130.1	0.00	10.75	1498.1	.468
151	9.00	34.71	26.888	123.0	0.00	8.95	1482.8	.595
151	7.77	34.56	26.963	116.7	0.00	7.72	1466.7	.715
151	6.88	34.50	27.043	109.8	0.00	6.82	1467.8	.827
151	5.36	34.38	27.264	87.5	0.00	5.21	1465.2	1.027
151	4.25	34.51	27.347	79.5	0.00	4.17	1463.6	1.192
151	3.28	34.56	27.509	66.1	0.00	3.19	1464.6	1.411

• BAD SALINITY VALUE

STATION 3 DATE= 22/02/84									
43.405 151.22E RAWRL 24/83									
TIME= 1754LOCAL DEPTH= 4180									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT	TEMP	S.S	Dyn #
m	°C	Ppt	kg/m <sup>3</sup>	°C	ML/L	°C	°C	M/Sec	
085	0	17.000	35.250	25.765	222.0	0.00	17.00	1514.2	0.000
085	23	18.240	35.330	25.919	208.1	0.00	18.24	1512.4	
086	48	15.900	35.310	26.010	200.2	0.00	15.89	1511.3	
085	70	15.780	35.310	26.037	194.3	0.00	15.77	1511.4	
085	92	14.740	35.340	26.292	174.7	0.00	14.73	1508.5	
085	133	12.870	35.290	26.601	144.2	0.00	12.85	1503.3	
085	173	12.300	35.180	26.872	140.4	0.00	12.28	1501.8	
086	294	10.870	34.680	26.784	132.0	0.00	10.83	1494.3	
085	498	8.910	34.650	26.687	126.8	0.00	8.86	1494.1	
086	694	7.720	34.570	26.878	118.7	0.00	7.66	1482.8	
086	894	6.080	34.470	27.124	105.0	0.00	6.00	1486.5	
085	1094	4.850	34.450	27.279	88.6	0.00	4.58	1487.0	
086	1294	3.650	34.530	27.448	72.8	0.00	3.55	1486.3	
085	1499	3.020	34.570	27.534	64.8	0.00	2.98	1487.4	
ISL	0	17.04	35.35	25.785	222.0	0.00	17.08	1514.2	0.000
ISL	10	16.74	35.34	25.840	215.2	0.00	16.73	1513.3	.022
ISL	25	16.31	35.33	25.930	207.1	0.00	16.30	1512.3	.054
ISL	50	15.88	35.31	26.014	198.8	0.00	15.87	1511.3	.104
ISL	75	15.54	35.32	26.101	192.4	0.00	15.53	1510.7	.154
ISL	100	14.31	35.32	26.271	187.3	0.00	14.28	1507.2	.199
ISL	150	12.87	35.23	26.633	143.5	0.00	12.85	1502.5	.278
ISL	200	11.96	35.13	26.701	138.2	0.00	11.84	1500.8	.348
ISL	250	11.37	35.05	26.749	134.6	0.00	11.34	1499.4	.414
ISL	300	10.80	34.97	26.786	131.9	0.00	10.78	1496.1	.481
ISL	400	9.75	34.78	26.824	126.8	0.00	9.70	1495.7	.612
ISL	500	8.89	34.66	26.848	126.8	0.00	8.84	1494.1	.740
ISL	600	8.38	34.61	26.919	123.4	0.00	8.29	1493.7	.864
ISL	800	6.85	34.51	27.052	111.8	0.00	6.77	1491.0	1.100
ISL	1000	5.27	34.44	27.204	97.0	0.00	5.19	1487.8	1.309
ISL	1300	3.63	34.33	27.430	72.7	0.00	3.54	1486.3	1.584

STATION 5 DATE= 23/02/84									
45.205 151.20E RAWRL 24/83									
TIME= 1200LOCAL DEPTH= 4500									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT	TEMP	S.S	Dyn #
m	°C	Ppt	kg/m <sup>3</sup>	°C	ML/L	°C	°C	M/Sec	
085	0	14.020	34.910	26.114	186.8	0.00	14.02	1504.1	0.000
086	21	14.000	34.890	26.103	190.5	0.00	14.00	1504.4	
086	42	13.720	34.910	26.177	184.0	0.00	13.71	1503.8	
085	63	13.490	34.950	26.255	177.2	0.00	13.48	1503.5	
085	84	12.310	34.970	26.545	150.0	0.00	12.10	1499.2	
086	123	11.210	35.070	26.782	127.6	0.00	11.19	1497.0	
086	181	10.420	34.900	26.802	127.6	0.00	10.40	1494.7	
ISL	0	14.02	34.91	26.114	186.8	0.00	14.02	1504.1	0.000
ISL	10	14.01	34.90	26.109	186.8	0.00	14.01	1504.4	.019
ISL	25	13.54	34.88	26.117	180.3	0.00	13.54	1504.3	.047
ISL	50	13.43	34.93	26.182	183.8	0.00	13.43	1503.7	.094
ISL	75	12.63	34.94	26.435	180.4	0.00	12.62	1500.8	.137
ISL	100	11.61	35.03	26.652	140.2	0.00	11.79	1498.5	.175
ISL	150	10.32	35.04	26.796	127.6	0.00	10.30	1496.2	.241

STATION 4 DATE= 23/02/84									
44.305 151.30E RAWRL 24/83									
TIME= 0300LOCAL DEPTH= 4280									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT	TEMP	S.S	Dyn #
m	°C	Ppt	kg/m <sup>3</sup>	°C	ML/L	°C	°C	M/Sec	
085	0	14.180	34.780	25.984	201.2	0.00	14.18	1504.4	
086	17	14.140	34.780	25.988	201.3	0.00	14.14	1504.8	
ISL	0	14.18	34.78	25.984	201.2	0.00	14.18	1504.4	0.000
ISL	10	14.15	34.78	25.987	201.2	0.00	14.15	1504.8	.020
ISL	0	19.41	35.81	25.383	258.3	0.00	19.41	1521.2	0.000
ISL	10	19.41	35.81	25.384	258.6	0.00	19.41	1521.4	.029
ISL	25	19.40	35.61	25.385	259.0	0.00	19.40	1521.6	.065
ISL	50	19.37	35.84	25.404	258.1	0.00	19.36	1522.0	.129
ISL	75	18.12	35.58	25.688	231.7	0.00	18.10	1518.8	.191
ISL	100	18.34	35.47	26.027	200.2	0.00	18.22	1513.8	.245
ISL	150	14.14	35.35	26.428	163.3	0.00	14.11	1507.5	.335
ISL	200	12.37	35.18	26.649	143.6	0.00	12.34	1502.2	.412
ISL	250	11.34	35.03	26.729	136.5	0.00	11.33	1499.5	.462
ISL	300	10.53	34.82	26.794	131.0	0.00	10.50	1497.1	.549
ISL	400	9.18	34.74	26.880	124.0	0.00	9.13	1493.6	.618
ISL	500	7.98	34.61	26.972	118.2	0.00	7.82	1490.5	.798
ISL	600	6.83	34.55	27.070	107.3	0.00	6.87	1488.1	.808
ISL	800	5.20	34.48	27.240	91.2	0.00	5.13	1484.3	1.107
ISL	1000	4.22	34.51	27.377	78.6	0.00	4.14	1483.7	1.278
ISL	1300	3.18	34.58	27.532	63.7	0.00	3.09	1484.4	1.488





## Cruise TC 2

*Notes for cruise TC 2**Additional Nansen data for cruise TC 2*

Depth (m)	T	S	O <sub>2</sub>	
2467	1.96	-	-	Station 1
499	-	34.733	5.03	Station 3
3950	1.173	-	4.39	Station 4
1540	2.72	-	-	Station 7

The depths of 2967 to 4367 m for station 1 were extrapolated from a curve of wire length (L) and differences between thermometric depth (Z) and wire length (the L-Z curve). (The two deepest bottles were fouled by XBT wire.) Values used were the surface and for the 2067, 2267, 2467, and 2667 m accepted depths. Unlike many extrapolations, the shape of the L-Z curve was such that no error is expected in the extrapolated values.

Only the deep cast was made at station 1. The surface temperature value given was obtained by surface bucket and stem thermometer. The surface salinity is a dummy value used to get a program run.

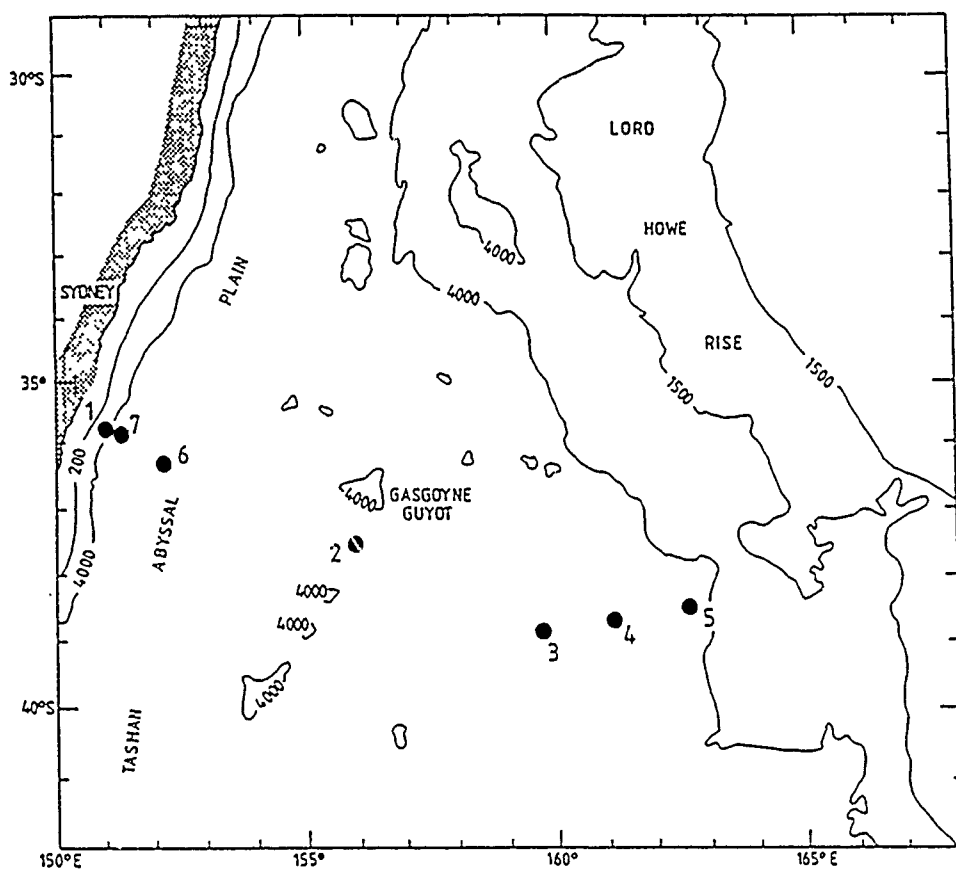


Figure 15. Nansen station positions for survey TC 2

*Other sources of data for cruise TC 2*

The cruise was a collaborative effort between SCRIPPS Institution of Oceanography, University of California, San Diego, the Australian National University (ANU), and RANRL involving several types of bottom moored instruments, hydrographic measurements, current meter and other data. Research papers continue to be published on the cruise data, so that the list below may not be complete.

Bindoff, N.L., Filloux, J.H., Mulhearn, P.J., Lilley, F.E.M. and Ferguson, I.J.  
"Vertical Electric Field Fluctuations at the Floor of the Tasman Abyssal Plain".  
Deep-Sea Research, 33, pp.587-600, 1986

Ferguson, I.J., Filloux, J.H., Lilley, F.E.M., Bindoff, N.L. and Mulhearn, P.J.  
"A Seafloor Magnetotelluric Sounding in the Tasman Sea".  
Geophysical Research Letters, 12, pp.554-8, 1985

Filloux, J.H., Lilley, F.E.M., Ferguson, I.J., Bindoff, N.L. and Mulhearn, P.J.  
"The Tasman Project of Seafloor Magnetotelluric Exploration".  
Exploration Geophysics, 16, pp.221-4, 1985

Lilley, F.E.M., Filloux, J.H., Bindoff, N.L., Ferguson, I.J. and Mulhearn, P.J.  
"Barotropic Flow of a Warm-Core Ring from Seafloor Electric Measurements".  
Journal of Geophysical Research, 91, pp.12779-12984, 1986

Lilley, F.E.M., Filloux, J.H., Ferguson, I.J., Bindoff, N.L. and Mulhearn, P.J. (1988)  
"The Tasman Project of Seafloor Magnetotelluric Exploration: Experiment and Observation".  
Physics of the Earth and Planetary Interiors, 53, 405-421

Lilley, F.E.M., Mulhearn, P.J., Filloux, J.H., Bindoff, N.L. and Ferguson, I.J.  
"Pressure Fluctuations on the Open-Ocean Floor: Mid-Tasman Sea at (38°30'S, 162°38'E) Near the Lord Howe Rise".  
Australian Journal of Marine and Freshwater Research, 37, pp.27-37, 1986

Mulhearn, P.J., Filloux, J.H., Lilley, F.E.M., Bindoff, N.L. and Ferguson, I.J.  
"A Deep Boundary Current at the Foot of the New South Wales Continental Slope?".  
RANRL Tech. Memo. 16/85

Mulhearn, P.J.  
"A long-Period Record of Bottom Currents on the Tasman Abyssal Plain".  
RANRL Tech. Memo 17/85

Mulhearn, P.J.  
"A Deep Hydrographic Section across the Tasman Sea".  
RANRL Tech. Memo 18/85

Mulhearn, P.J., Filloux, J.H., Lilley, F.E.M., Bindoff, N.L. and Ferguson, I.J.  
"Abyssal Currents During the Formation and Passage of an East Australian Current Warm-Core Ring".  
Deep-Sea Research, 33, pp.1563-1576, 1986

Mulhearn, P.J., Filloux, J.H., Lilley, F.E.M., Bindoff, N.L. and Ferguson, I.J. (1988)  
"Comparisons Between Surface, Barotropic and Abyssal Flows During the Passage of a Warm-Core Ring".  
Australian Journal Marine and Freshwater Research, Vol.39, pp.697-707

N.L. Bindoff and I.J. Ferguson both submitted Ph'D theses on the magneto-telluric measurements made on cruises TC 1 and TC 2.

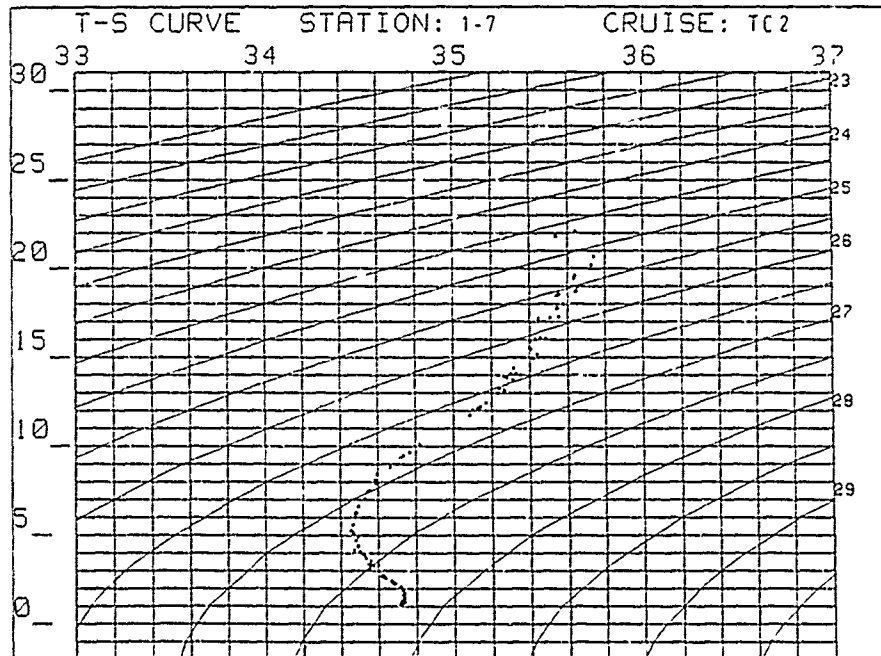
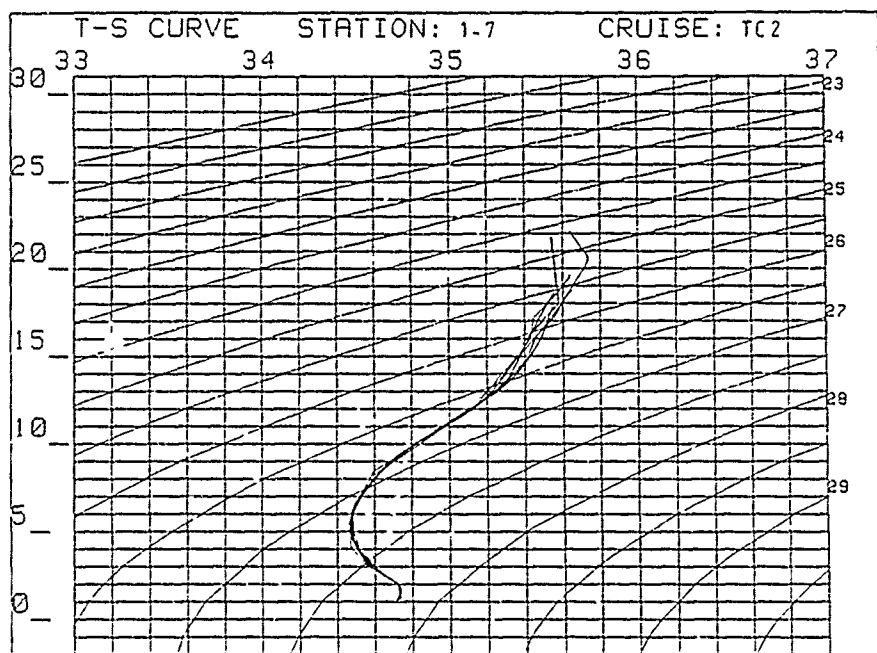


Figure 16. Temperature-salinity curves and scatter plot for cruise TC 2

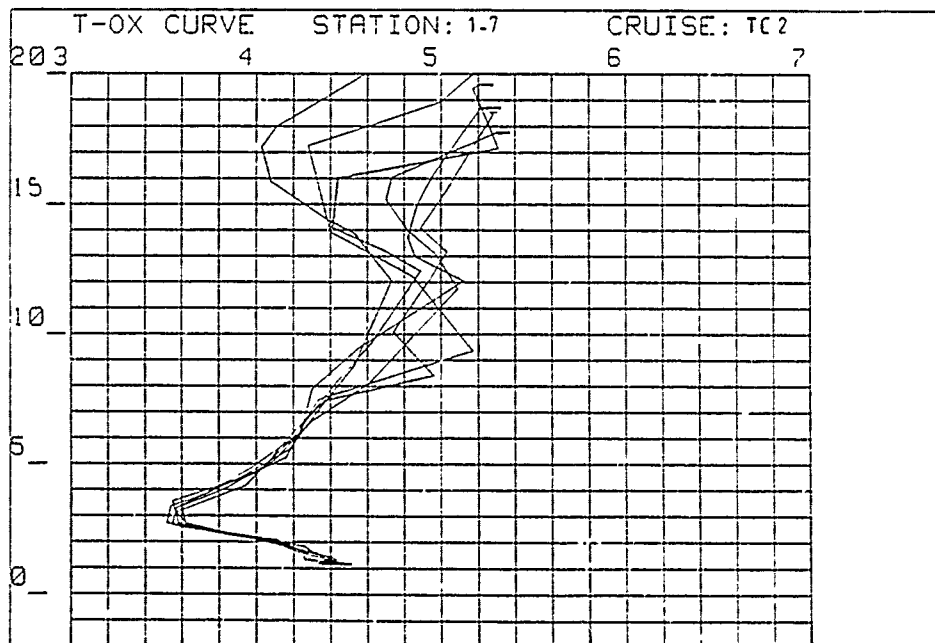
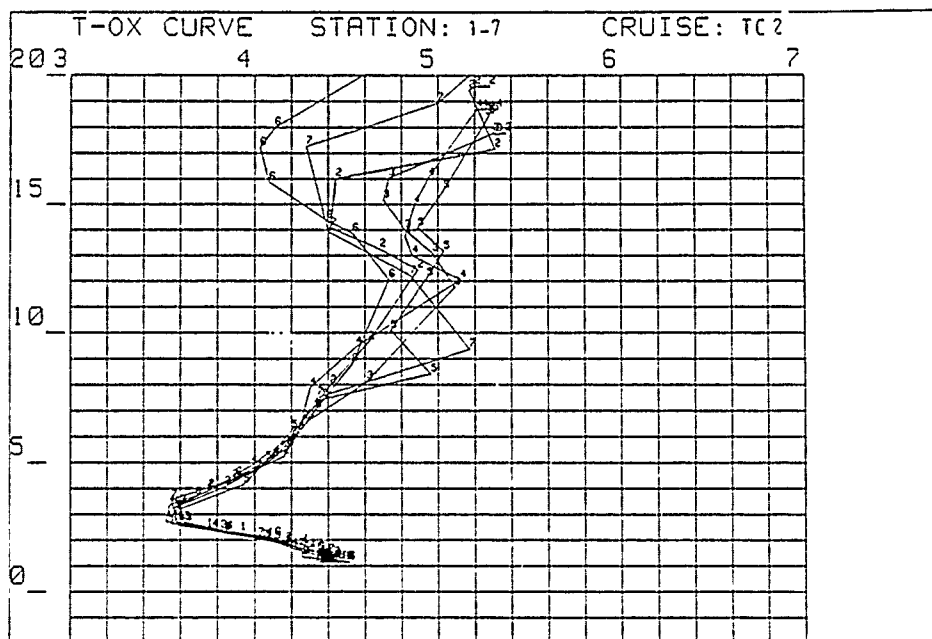


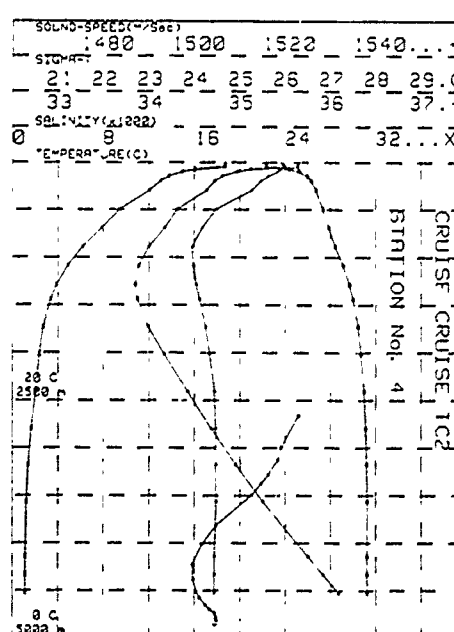
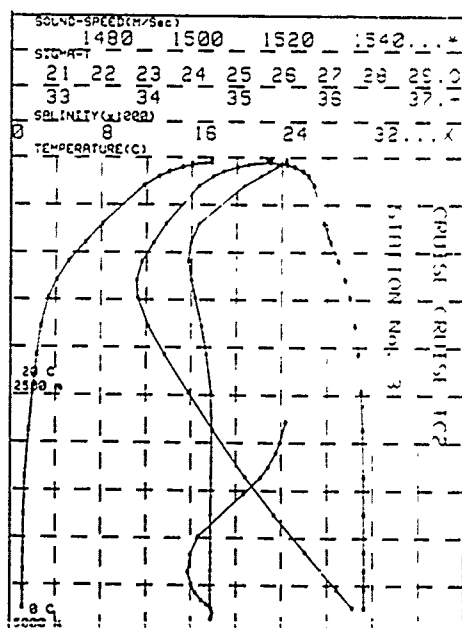
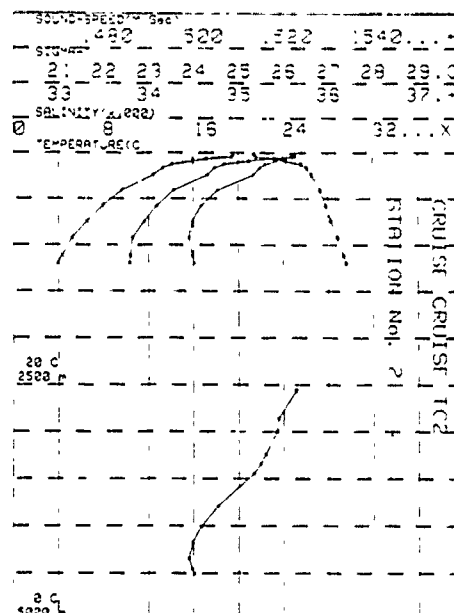
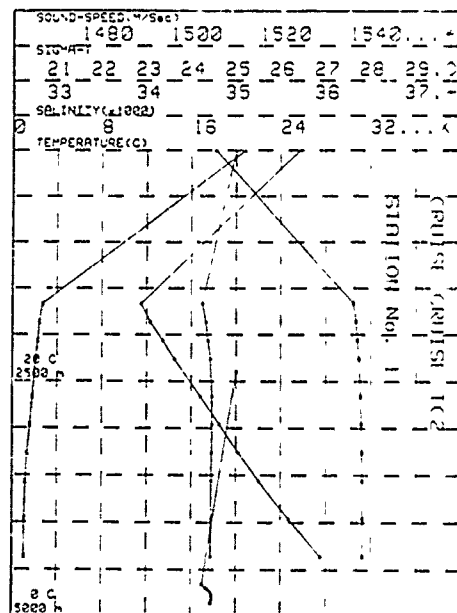
Figure 17. Temperature-oxygen curves for cruise TC 2

STATION 1									
DATE= 27/03/84									
TIME= 0225LOCAL									
CRUISE TC2									
DEPTH= 4850									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CE	POT.TEMP	S.S	Dym.e	
m	°C	Pps	CL/T	ML/L	°C	°C	H/Sec		
0	20.800	35.000	24.549	327.7	0.00	20.80	1524.3		
085	16.99	34.823	27.610	37.1	3.58	2.59	1460.7		
085	16.98	34.863	27.668	31.6	3.74	2.28	1490.8		
085	20.87	34.608	27.598	49.2	3.22	2.12	1493.6		
085	22.07	34.714	27.738	45.6	4.07	1.92	1496.2		
085	25.67	34.731	27.770	42.5	4.26	1.52	1502.0		
085	29.87	34.733	27.787	40.7	4.30	1.40	1506.3		
085	32.87	34.729	27.801	38.6	4.39	1.14	1510.5		
085	35.87	34.723	27.809	37.1	4.43	.95	1515.1		
085	39.87	34.723	27.813	36.9	4.49	.83	1521.8		
085	43.87	34.719	27.811	37.8	4.51	.77	1528.8		
ISL	2000	34.68	27.687	50.1	3.68	2.18	1492.7		
ISL	2500	34.73	27.758	43.7	4.20	1.75	1499.8		
ISL	3000	34.73	27.789	40.4	4.31	1.37	1506.4		
ISL	3500	34.73	27.804	37.4	4.42	.98	1514.0		
ISL	4000	34.72	27.813	36.9	4.49	.82	1522.2		

STATION 2									
DATE= 28/03/84									
TIME= 0900LOCAL									
CRUISE TC2									
DEPTH= 4500									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CE	POT.TEMP	S.S	Dym.e	
m	°C	Pps	CL/T	ML/L	°C	°C	H/Sec		
0	18.580	35.638	25.309	280.5	5.28	18.58	1521.7		
085	23	35.640	25.342	281.2	5.20	18.58	1522.1		
085	45	35.635	25.397	256.8	5.17	19.42	1522.0		
085	87	35.448	25.623	218.8	5.31	17.14	1515.4		
085	90	35.430	26.077	193.2	4.44	16.00	1512.5		
085	129	35.301	26.404	163.0	4.41	14.08	1508.9		
085	199	35.246	26.334	153.8	4.88	13.27	1504.7		
085	245	35.170	26.638	145.4	4.88	12.40	1503.2		
085	413	34.787	26.830	129.5	4.42	9.60	1495.8		
085	582	34.588	26.957	119.0	4.41	7.90	1481.8		
085	748	34.484	27.078	104.4	4.28	6.52	1468.1		
085	825	34.453	27.214	95.3	4.18	5.18	1448.8		
085	1116	34.490	27.348	82.8	3.88	4.24	1448.0		
085	1200	34.510	27.402	77.3	3.75	3.86	1445.9		
ISL	0	35.64	25.380	280.5	5.28	18.58	1521.7		
ISL	10	35.64	25.381	280.8	5.24	18.58	1521.9		
ISL	25	35.64	25.305	280.9	5.19	18.58	1522.1		
ISL	50	35.58	25.510	248.0	5.29	18.80	1520.3		
ISL	75	35.45	25.917	219.0	4.64	18.74	1516.8		
ISL	100	35.30	26.180	186.6	4.43	15.40	1510.8		
ISL	150	35.227	26.478	158.4	4.37	13.58	1505.7		
ISL	200	35.22	26.518	150.1	4.79	12.12	1504.2		
ISL	250	35.15	26.645	144.8	4.88	12.30	1502.9		
ISL	300	35.01	26.708	124.8	4.79	11.58	1500.3		
ISL	400	34.78	26.817	120.3	4.64	9.78	1498.0		
ISL	500	34.68	26.898	124.1	4.50	8.88	1493.5		
ISL	600	34.58	26.949	117.9	4.39	7.75	1491.5		
ISL	800	34.47	27.118	104.4	4.25	6.07	1488.1		
ISL	1000	34.47	27.266	90.4	4.05	4.79	1484.3		

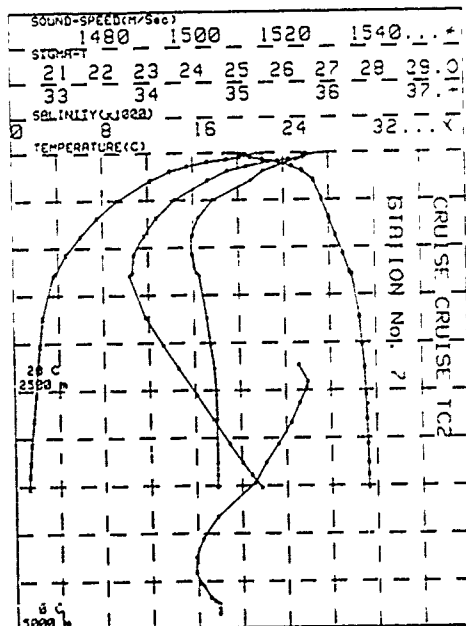
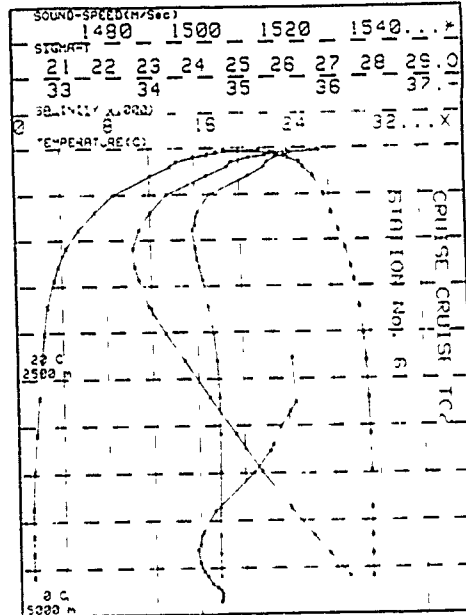
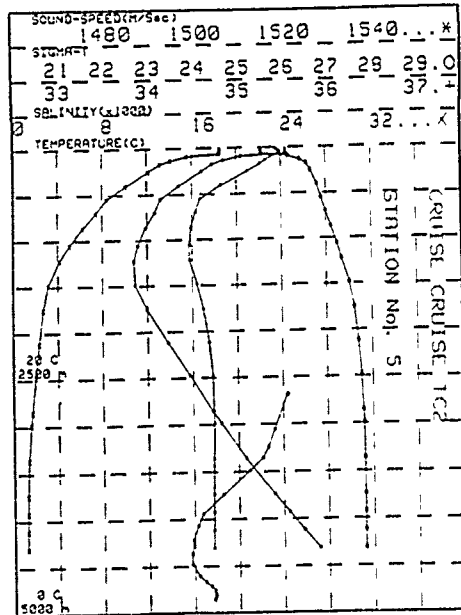
STATION 3									
DATE= 30/03/84									
TIME= 0900LOCAL									
CRUISE TC2									
DEPTH= 4840									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CE	POT.TEMP	S.S	Dym.e	
m	°C	Pps	CL/T	ML/L	°C	°C	H/Sec		
0	17.770	35.548	25.750	223.5	5.37	17.77	1518.5		
085	25	35.517	25.758	223.7	5.32	17.74	1518.8		
085	50	35.548	25.751	225.0	5.30	17.75	1517.3		
085	75	35.487	26.118	191.0	4.73	16.02	1512.4		
085	100	35.441	26.275	176.3	4.70	15.15	1510.1		
085	150	35.332	26.482	160.0	4.82	13.97	1507.0		
085	200	35.265	26.583	149.7	4.87	13.05	1504.7		
085	300	35.082	26.701	140.5	5.09	11.71	1501.8		
085	400	34.943	26.829	123.6	4.81	8.05	1494.3		
085	495	34.465	27.074	110.7	4.29	6.52	1491.6		
085	1094	34.488	27.235	95.0	4.10	5.08	1489.0		
085	1293	34.502	27.383	80.2	3.85	3.87	1487.9		
085	1480	34.545	27.488	68.6	3.60	3.25	1488.1		
085	1778	34.615	27.604	58.3	3.42	2.58	1490.5		
085	2075	34.692	27.679	51.5	3.82	2.22	1494.2		
085	2470	34.723	27.749	44.9	4.05	1.83	1499.4		
085	2863	34.735	27.783	41.2	4.25	1.48	1504.9		
085	3358	34.728	27.803	38.2	4.28	1.09	1511.9		
085	3754	34.721	27.806	37.8	4.43	.83	1518.4		
085	4149	34.719	27.808	38.1	4.38	.84	1521.1		
085	4547	34.717	27.808	38.2	4.48	.79	1528.5		
085	4944	34.718	27.807	38.8	4.79	.77	1532.0		
085	4742	34.719	27.809	38.6	4.38	.72	1535.5		
ISL	0	35.55	25.750	223.5	5.37	17.77	1518.5		
ISL	10	35.55	25.754	223.8	5.35	17.75	1519.6		
ISL	25	35.55	25.758	223.7	5.32	17.74	1518.8		
ISL	50	35.55	25.751	225.0	5.30	17.75	1517.3		
ISL	75	35.48	26.118	191.0	4.73	16.02	1512.4		
ISL	100	35.44	26.275	176.3	4.70	15.15	1510.1		
ISL	150	35.33	26.482	160.0	4.82	13.97	1507.0		
ISL	200	35.27	26.583	149.7	4.87	13.05	1504.7		
ISL	250	35.17	26.645	144.8	5.04	12.36	1503.1		
ISL	300	35.08	26.701	140.5	5.09	11.71	1501.8		
ISL	400	34.92	26.829	123.6	4.89	10.72	1499.6		
ISL	500	34.78	26.844	123.7	4.88	9.77	1497.7		
ISL	600	34.67	26.864	129.1	4.75	8.86	1495.9		
ISL	800	34.53	27.002	117.3	4.43	7.25	1492.9		
ISL	1000	34.47	27.160	102.3	4.20	5.70	1490.1		
ISL	1300	34.40	27.287	79.8	3.83	3.94	1487.9		
ISL	1500	34.31	27.487	68.7	3.80	3.18	1486.3		
ISL	2000	34.68	27.642	53.1	3.77	2.30	1493.2		
ISL	2500	34.72	27.732	44.8	4.07	1.80	1499.8		
ISL	3000	34.73	27.791	40.1	4.25	1.35	1506.7		
ISL	3500	34.72	27.805	38.0	4.35	1.02	1514.2		
ISL	4000	34.72	27.807	38.5	4.79	.87	1522.9		
ISL	4500	34.72	27.808	38.5	4.40	.77	1531.3		

STATION 4		38 15		181.122		CRUISE TC2		DEPTH= 4720	
DATE= 30/03/84		TIME= 1915LOCAL							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CE	POT.TEMP	S.S	Dym.e	
m	°C	Pps	CL/T	ML/L	°C	°C	H/Sec		
0	18.20	35.643	25.583	528.5	5.32	18.70	1519.3	0.000	
085	25.16	35.643	25.583	239.2	5.28	18.69	1519.7		
0	18.60	35.640	25.593	240.1	5.21	18.67	1520.0		
75	18.050	35.458	26.099	193.5	4.95	18.04	1512.5		
100	18.190	35.108	26.487	161.8	4.67	18.19	1504.3		
150	13.72	35.312	26.488	157.3	4.62	13.70	1506.1		
200	12.290	35.233	26.576	150.3	4.68	12.28	1504.4		
300	12.040	35.131	26.684	142.3	5.12	12.02	1493.2		
400	12.480	34.984	26.918	130.2	5.19	12.45	1490.3		
494	7.890	34.587	26.966	119.9	4.50	7.82	1502.7		
822	6.220	34.478	27.113	106.3	3.74	6.14	1490.0		
1058	4.680	34.488	27.283	96.7	3.98	4.79	1487.5		
1268	3.870	34.332	27.437	78.3	3.24	3.75	1477.5		
1431	3.370	34.557	27.487	68.8	3.54	3.24	1487.5		
1722	2.720	34.823	27.609	57.8	3.52	2.59	1489.8		
2020	2.340	34.697	27.674	41.7	3.77	2.23	1493.3		
2260	2.010	34.718	27.741	35.5	3.97	1.93	1497.0		
2798	1.680	34.751	27.781	41.1	4.20	1.47	1503.7		
3180	1.400	34.734	27.804	58.1	4.35	1.16	1509.7		
3585	1.238	34.737	27.818	36.5	4.44	0.97	1515.1		
4144	1.150	34.718	27.805	37.9	5.1	0.82	1525.0		
4335	1.132	34.737	27.818	38.2	4.43	0.8	1518.3		
4530	1.145	34.718	27.807	38.4	3.54	??	1513.3		
151.0	18.70	35.64	25.592	528.5	5.32	18.70	1519.3	0.000	
151.10	18.70	35.64	25.592	528.6	5.28	18.69	1519.4	0.000	
151.25	18.60	35.64	25.593	239.2	5.28	18.60	1519.7	0.000	
151.50	18.60	35.64	25.593	240.1	5.21	18.60	1520.0	0.120	
151.75	16.05	35.48	26.069	193.5	4.95	16.04	1512.5	0.170	
151.100	16.15	35.11	26.478	161.8	4.67	16.13	1504.3	0.170	
151.150	13.72	35.31	26.488	157.3	4.62	13.70	1506.1	0.202	
151.200	12.29	35.23	26.576	150.3	4.68	12.28	1504.4	0.170	
151.250	12.34	35.19	26.630	146.1	5.04	12.31	1503.7	0.170	
151.300	12.50	35.12	26.733	142.3	5.12	12.48	1493.2	0.210	
151.400	10.63	34.90	26.742	130.3	4.80	10.58	1499.1	0.640	
151.500	9.48	34.73	26.835	126.5	4.55	9.40	1496.3	795	
151.600	8.66	34.63	26.921	117.4	4.40	8.59	1494.8	1231	
151.650	8.10	34.63	26.928	110.0	4.68	8.09	1495.6	1.160	
151.1000	5.44	34.48	27.211	96.8	4.09	5.35	1486.8	0.795	
151.1300	3.83	34.52	27.428	75.5	3.72	3.73	1487.1	1.631	
151.1500	3.31	34.57	27.523	65.9	3.54	3.3	1487.9	1.770	
151.1700	2.94	34.66	27.670	55.1	3.75	2.96	1489.0	1.770	
151.1900	1.96	34.72	27.781	40.4	4.09	1.99	1479.7	2.551	
151.2000	1.52	34.73	27.794	36.4	4.29	1.50	1504.5	2.201	
151.2500	1.25	34.74	27.817	34.7	4.43	0.99	1514.1	2.070	
151.4000	1.17	34.72	27.810	37.6	4.75	4.2	1521.0	2.270	
151.4500	1.15	34.73	27.809	38.2	4.43	0.9	1518.3	2.270	





STATION 5 DATE= 03/03/84										STATION 6 DATE= 03/04/84									
30.225			102.225			CRUISE TC2				34.155			152.125			CRUISE TC2			
TIME= 1105LOCAL			TIME= 1105LOCAL			DEPTH= 4800				TIME= 0715LOCAL			TIME= 0715LOCAL			DEPTH= 4830			
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	M/L	POT. TEMP	S.S	DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	M/L	POT. TEMP	S.S		
m	°C	Pct	kg/m <sup>3</sup>	°C	°C	°C	°C	g/kg	m	°C	Pct	kg/m <sup>3</sup>	°C	°C	°C	°C	g/kg		
000	18.550	35.354	25.360	241.5	5.30	18.55	1518.7		000	21.630	35.540	24.677	325.5	5.11	21.63	1527.8	0.000		
005	18.540	35.354	25.363	242.0	5.27	18.54	1519.1		005	21.610	35.540	24.684	325.8	5.02	21.61	1528.0	0.033		
010	18.560	35.353	25.357	243.4	5.28	18.55	1519.5		010	17.990	35.578	25.710	228.1	4.11	17.99	1518.0	0.061		
015	18.480	35.342	25.374	242.5	5.28	18.48	1518.6		015	17.210	35.511	25.857	215.7	4.03	17.21	1518.0	0.151		
020	15.540	35.396	26.159	187.3	5.03	15.53	1511.1		020	15.670	35.401	26.087	194.6	4.08	15.65	1512.3	0.208		
025	15.180	35.328	26.424	143.2	4.89	15.18	1507.0		025	14.370	35.315	26.353	170.6	4.39	14.35	1508.3	0.254		
030	15.180	35.348	26.388	150.4	5.03	15.18	1504.6		030	12.600	35.283	26.436	163.9	4.53	12.63	1507.4	0.298		
035	12.120	35.129	26.645	143.0	4.94	12.09	1502.2		035	12.050	35.101	26.859	144.7	4.73	12.01	1502.7	0.340		
040	10.080	34.823	26.800	132.4	4.74	10.03	1497.1		040	8.810	34.645	26.868	123.1	4.53	8.78	1493.3	0.380		
045	8.410	34.536	26.895	124.8	4.96	8.35	1493.0		045	6.660	34.529	27.044	111.4	4.33	6.68	1490.0	0.419		
050	7.051	34.541	26.994	115.7	4.37	7.38	1491.6		050	5.160	34.465	27.185	96.3	4.18	5.48	1487.4	0.458		
055	6.240	34.486	27.116	103.7	4.20	6.18	1489.7		055	4.420	34.490	27.336	83.7	3.90	4.33	1486.0	0.497		
060	5.040	34.470	27.231	92.6	4.04	4.95	1486.0		060	3.680	34.534	27.448	73.0	3.58	3.58	1480.3	0.536		
065	4.150	34.470	27.346	83.0	3.84	4.05	1487.0		065	3.290	34.573	27.517	64.4	3.57	3.18	1487.2	0.575		
070	3.140	34.552	27.515	68.4	3.57	3.03	1487.3		070	2.640	34.627	27.620	56.3	3.55	2.52	1489.3	0.614		
075	2.450	34.623	27.616	58.3	3.63	2.52	1489.9		075	2.016	34.682	27.691	49.8	3.65	2.17	1493.0	0.653		
080	2.120	34.685	27.697	49.5	3.84	2.12	1484.5		080	2.090	34.715	27.736	43.6	4.11	1.92	1487.0	0.692		
085	2.010	34.723	27.754	44.1	4.11	1.77	1496.3		085	2.000	34.755	27.774	42.2	4.17	1.81	1500.5	0.731		
090	1.950	34.723	27.754	44.1	4.11	1.77	1496.3		090	2.000	34.755	27.774	42.2	4.17	1.81	1500.5	0.770		
095	1.810	34.729	27.785	40.5	4.28	1.40	1504.3		095	2.000	34.755	27.774	42.2	4.17	1.81	1500.5	0.809		
100	1.610	34.736	27.798	38.0	4.35	1.29	1506.2		100	2.000	34.755	27.774	42.2	4.17	1.81	1500.5	0.848		
105	1.273	34.725	27.806	37.4	4.37	1.02	1511.7		105	2.000	34.755	27.774	42.2	4.17	1.81	1500.5	0.887		
110	1.175	34.721	27.809	37.1	4.45	0.99	1517.9		110	2.000	34.755	27.774	42.2	4.17	1.81	1500.5	0.926		
115	1.148	34.725	27.817	37.2	4.48	0.88	1521.2		115	2.000	34.755	27.774	42.2	4.17	1.81	1500.5	0.965		
120	1.148	34.719	27.810	37.6	4.40	0.82	1524.5		120	2.000	34.755	27.774	42.2	4.17	1.81	1500.5	1.004		
125	1.144	34.718	27.809	38.0	4.34	0.79	1527.8		125	2.000	34.755	27.774	42.2	4.17	1.81	1500.5	1.043		
130	18.55	35.35	25.360	241.5	5.30	18.55	1518.7	0.000	130	21.63	35.54	24.677	325.5	5.11	21.63	1527.8	0.000		
135	18.54	35.35	25.362	241.8	5.28	18.54	1518.9	0.024	135	21.61	35.54	24.684	325.8	5.02	21.61	1528.0	0.033		
140	18.55	35.35	25.361	242.2	5.27	18.54	1519.1	0.080	140	17.99	35.578	25.710	228.1	4.11	17.99	1518.0	0.061		
145	18.54	35.35	25.360	242.2	5.28	18.53	1519.3	0.121	145	17.21	35.511	25.857	215.7	4.03	17.21	1518.0	0.151		
150	15.54	35.396	26.159	187.3	5.03	15.53	1511.1	0.208	150	15.67	35.401	26.087	194.6	4.08	15.65	1512.3	0.254		
155	15.18	35.328	26.424	143.2	4.89	15.18	1507.0	0.298	155	14.37	35.315	26.353	170.6	4.39	14.35	1508.3	0.340		
160	15.18	35.348	26.388	150.4	5.03	15.18	1504.6	0.380	160	12.60	35.283	26.436	163.9	4.53	12.63	1507.4	0.419		
165	12.12	35.129	26.645	143.0	4.94	12.09	1502.2	0.458	165	12.05	35.101	26.859	144.7	4.73	12.01	1502.7	0.497		
170	10.08	34.823	26.800	132.4	4.74	10.03	1497.1	0.536	170	8.81	34.645	26.868	123.1	4.53	8.78	1493.3	0.575		
175	8.41	34.536	26.895	124.8	4.96	8.35	1493.0	0.614	175	6.66	34.529	27.044	111.4	4.33	6.68	1490.0	0.653		
180	7.45	34.541	26.994	115.7	4.37	7.38	1491.6	0.692	180	5.16	34.465	27.185	96.3	4.18	5.48	1487.4	0.731		
185	6.24	34.486	27.116	103.7	4.20	6.18	1489.7	0.770	185	4.42	34.490	27.336	83.7	3.90	4.33	1486.0	0.809		
190	5.04	34.470	27.231	92.6	4.04	4.95	1486.0	0.848	190	3.68	34.534	27.448	73.0	3.58	3.58	1480.3	0.887		
195	4.15	34.470	27.346	83.0	3.84	4.05	1487.0	0.926	195	3.29	34.573	27.517	64.4	3.57	3.18	1487.2	0.965		
200	3.14	34.552	27.515	68.4	3.57	3.03	1487.3	1.004	200	2.64	34.627	27.620	56.3	3.55	2.52	1489.3	1.043		
205	2.45	34.623	27.616	58.3	3.63	2.52	1489.9	1.083	205	2.016	34.682	27.691	49.8	3.65	2.17	1493.0	1.083		
210	2.12	34.685	27.697	49.5	3.84	2.12	1484.5	1.122	210	2.09	34.715	27.736	43.6	4.11	1.92	1487.0	1.161		
215	2.01	34.723	27.754	44.1	4.11	1.77	1496.3	1.161	215	2.00	34.755	27.774	42.2	4.17	1.81	1500.5	1.178		
220	1.95	34.723	27.754	44.1	4.11	1.77	1496.3	1.200	220	2.00	34.755	27.774	42.2	4.17	1.81	1500.5	1.195		
225	1.81	34.729	27.785	40.5	4.28	1.40	1504.3	1.239	225	2.00	34.755	27.774	42.2	4.17	1.81	1500.5	1.212		
230	1.61	34.736	27.798	38.0	4.35	1.29	1506.2	1.278	230	2.00	34.755	27.774	42.2	4.17	1.81	1500.5	1.229		
235	1.27	34.725	27.806	37.4	4.37	1.02	1511.7	1.317	235	2.00	34.755	27.774	42.2	4.17	1.81	1500.5	1.246		
240	1.17	34.721	27.809	37.1	4.45	0.99	1517.9	1.356	240	2.00	34.755	27.774	42.2	4.17	1.81	1500.5	1.263		
245	1.14	34.725	27.817	37.2	4.48	0.88	1521.2	1.395	245	2.00	34.755	27.774	42.2	4.17	1.81	1500.5	1.280		
250	1.14	34.719	27.810	37.6	4.40	0.82	1524.5	1.434	250	2.00	34.755	27.774	42.2	4.17	1.81	1500.5	1.297		
255	1.14	34.718	27.809	38.0	4.34	0.79	1527.8	1.473	255	2.00	34.755	27.774	42.2	4.17	1.81	1500.5	1.314		
260	18.55	35.35	25.360	241.5	5.30	18.55	1518.7	0.000	260	21.63	35.54	24.677	325.5	5.11	21.63	1527.8	0.000		
265	18.54	35.35	25.362	241.8	5.28	18.54	1518.9	0.024	265	21.61	35.54	24.684	325.8	5.02	21.61	1528.0	0.033		
270	18.55	35.35	25.361	242.2	5.27	18.54	1519.1	0.080	270	17.99	35.578	25.710	228.1	4.11	17.99	1518.0	0.061		
275	18.54	35.35	25.360	242.2	5.28	18.53	1519.3	0.121	275	17.21	35.511	25.857	215.7	4.03	17.21	1518.0	0.151		
280	15.54	35.396	26.159	187.3	5.03	15.53	1511.1	0.208	280	15.67	35.401	26.087	194.6	4.08	15.65	1512.3	0.254		
285	15.18	35.328	26.424	143.2	4.89	15.18	1507.0	0.298	285	14.37	35.315	26.353	170.6	4.39	14.35	1508.3	0.340		
290	15.18	35.348	26.388	150.4	5.03	15.18	1504.6	0.380	290	12.60	35.283	26.436	163.9	4.53	12.63	1507.4	0.419		
295	12.12	35.129	26.645	143.0	4.94	12.09	1502.2	0.458	295	12.05	35.101	26.859	144.7	4.73	12.01	1502.7	0.497		
300	10.08	34.823	26.800	132.4	4.74	10.03	1497.1	0.536	300	8.81	34.645	26.868	123.1	4.53	8.78	1493.3	0.575		
305	8.41	34.536	26.895	124.8	4.96	8.35	1493.0	0.614	305	6.66	34.529	27.044	111.4	4.33	6.68	1490.0	0.653		
310	7.45	34.541	26.994	115.7	4.37	7.38	1491.6	0.692	310	5.16	34.465	27.185	96.3	4.18	5.48	1487.4	0.731		
315	6.24	34.486	27.116	103.7	4.20	6.18	1489.7	0.770	315	4.42	34.490	27.336	83.7	3.90	4.33	1486.0	0.809		
320	5.04	34.470	27.231	92.6	4.04	4.95	1486.0	0.848	320	3.68	34.534	27.448	73.0	3.58	3.58	1480.3	0.887		
325	4.15	34.470	27.346	83.0</															



## Cruise RANRL 11/85

*Notes for cruise RANRL 11/85*

Six Nansen stations were occupied at one site, and three at another, all nominally to 200 m, to obtain an indirect guide to calibration for the CTD profiler on HMAS Cook. The CTD was yo-yoed continuously for several days at each site when the gear brought for this purpose was damaged after being towed while still outboard.

The winch digital depth readout was found to be erratic at stations 2 and 3 during onboard processing of reversing thermometer data, leading to several unknown depths at these stations. It is possible that good depths could be assigned to these values by comparisons against XBT and CTD profiles made before and after the Nansen stations. (These data are unavailable to the author at present.) The values with unknown depths are given below, with the likely depths also.

Estimated depth	Actual depth	T	S	
35	?	29.44	34.482	Station 2
45	?	28.82	34.446	
55	?	27.24	34.464	
75	?	24.27	34.783	
10	?	29.55	34.512	Station 3
20	?	29.42	34.499	
30	?	28.98	34.640	
40	?	28.14	34.540	
95	?	24.21	34.866	
165	?	19.94	35.006	
117 ± 2 *	?	22.12	34.881	Station 4

\* This may be a pretrip value

*Other sources of data for cruise RANRL 11/85*

Pellegrini, J.J., and Penrose, J.D. (1986)

"Comparison of Ship-based and Satellite AVHRR Estimates of Sea Surface Temperature".

Proceedings 1st Australian AVHRR Conference. 22 to 24 October 1986, Perth, Western Australia

Scott, B.D. (1986)

"RAN Research Laboratory Oceanographic Cruise Report for RANRL 11/85".

(Unpublished document). A narrative of the actual cruise.

Optical, nutrient, and phytoplankton pigment measurements were taken by a Danish group from the Institute of Physical Oceanography, University of Copenhagen, but results are unknown. N. Hojerslev was the leader of the Danish team.

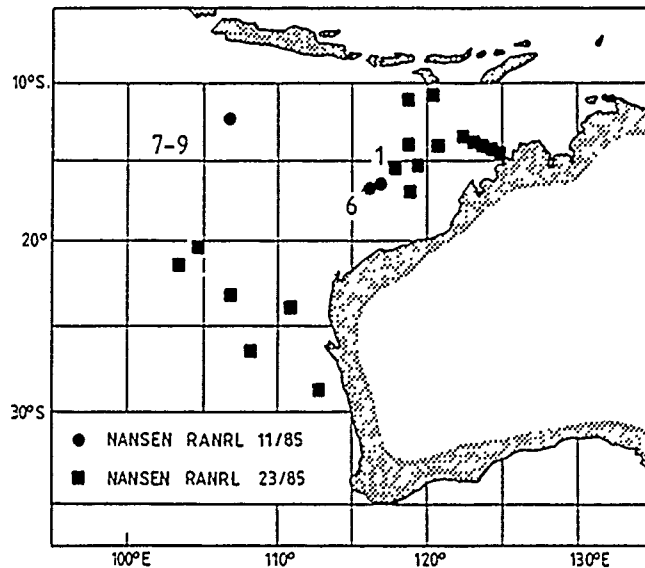


Figure 18. Nansen station positions for survey RANRL 11/85 (Nansen station positions for survey RANRL 23/83 are also shown)

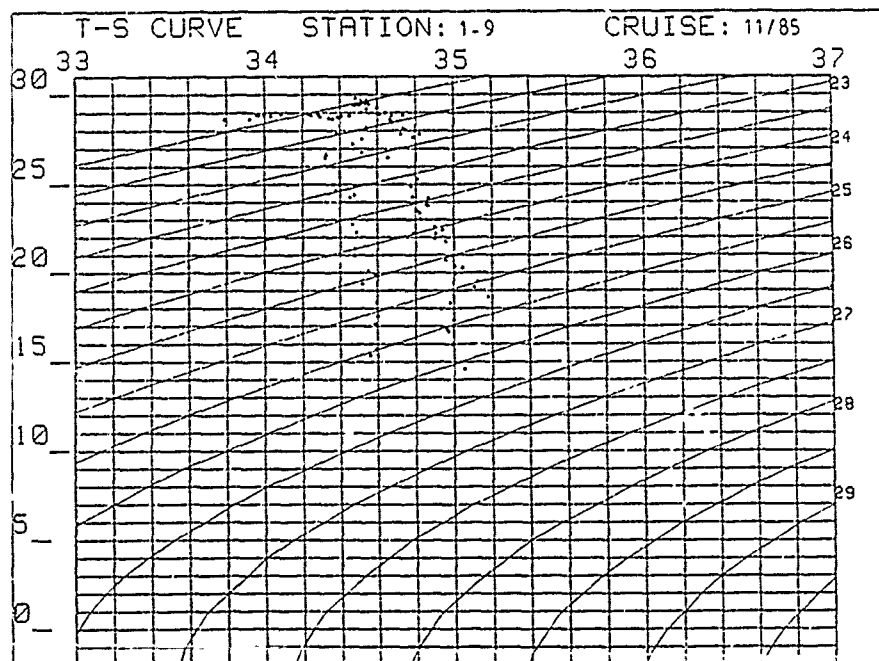
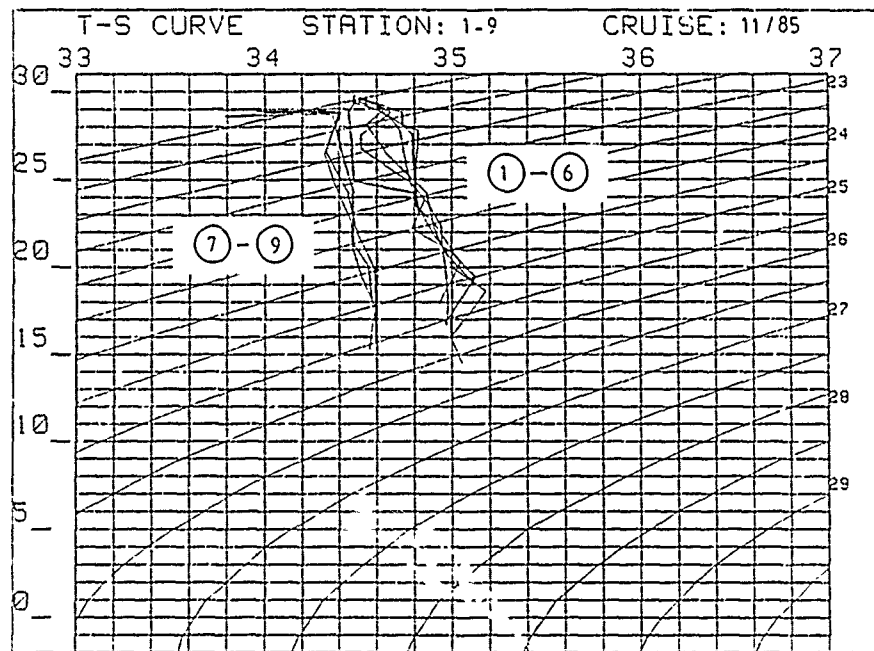
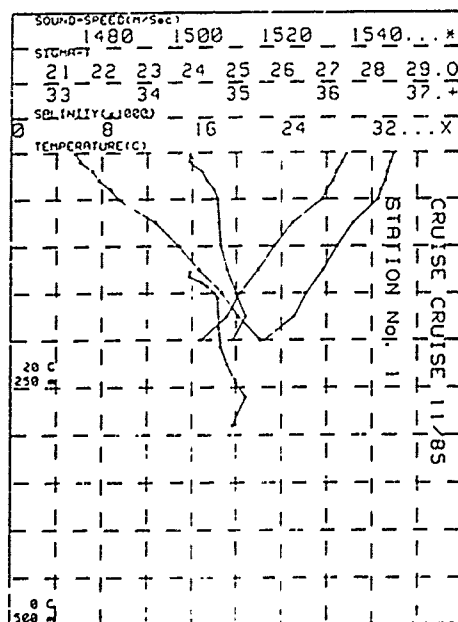


Figure 19. Temperature-salinity curves and scatter plot for RANRL 11/85

STATION 1		15.145	118.42E	CRUISE 11/85					
DATE= 26/03/85		TIME= 0550GMT		DEPTH= 5600					
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OT	POT.TEMP	W.S	Dym
m	°C	Pct	kg/m <sup>3</sup>	CL/T	ML/L	°C	°C	M/Sec	
OBS 0	29.790	34.479	21.410	637.7	0.00	29.79	1544.8		
OBS 10	29.400	34.488	21.534	628.2	0.00	29.40	1544.2		
OBS 20	28.910	34.613	21.806	600.6	0.00	28.91	1543.5		
OBS 30	28.600	34.645	21.948	587.4	0.00	28.59	1543.0		
OBS 40	28.010	34.748	22.224	563.2	0.00	28.00	1542.0		
OBS 50	27.810	34.787	22.353	548.4	0.00	27.80	1541.4		
OBS 75	25.010	34.802	23.190	470.2	0.00	24.99	1535.9		
OBS 100	23.240	34.833	23.997	422.7	0.00	23.24	1532.3		
OBS 125	21.830	34.900	24.163	379.1	0.00	21.81	1528.2		
OBS 150	20.340	35.004	24.678	330.9	0.00	20.31	1523.3		
OBS 175	19.170	35.108	25.081	294.8	0.00	19.14	1522.8		
OBS 200	18.810	34.944	25.533	250.4	0.00	18.78	1518.2		
ISL 0	29.79	34.48	21.410	637.7	0.00	29.79	1544.8	0.000	
ISL 10	29.40	34.47	21.534	628.2	0.00	29.40	1544.2	0.003	
ISL 25	28.79	34.64	21.963	599.3	0.00	28.78	1543.3	0.154	
ISL 50	27.81	34.79	22.353	548.4	0.00	27.80	1541.4	0.297	
ISL 75	25.01	34.80	23.190	470.2	0.00	24.99	1535.9	0.424	
ISL 100	23.24	34.82	23.997	422.7	0.00	23.24	1532.3	0.536	
ISL 150	20.34	35.00	24.678	330.9	0.00	20.31	1523.3	0.729	
ISL 200	18.81	34.94	25.533	250.4	0.00	18.78	1518.2	0.871	

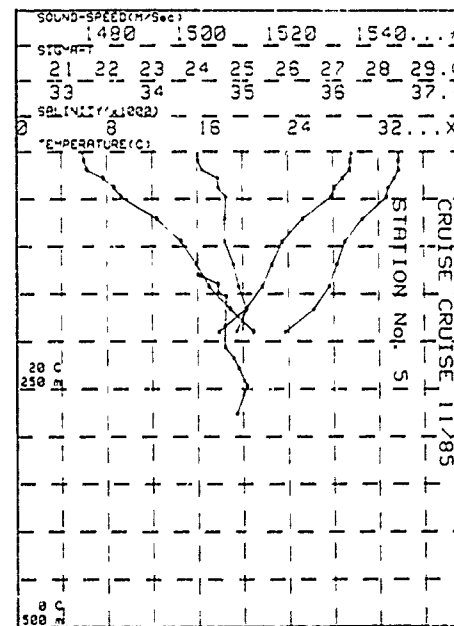
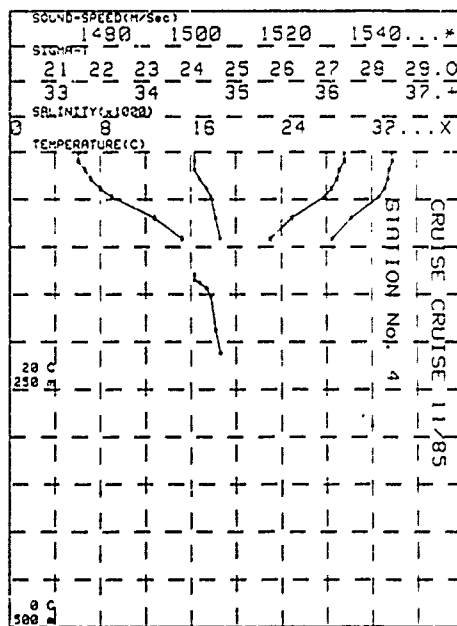
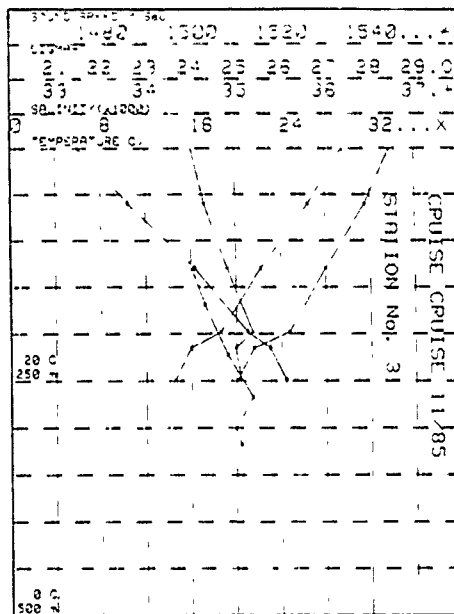
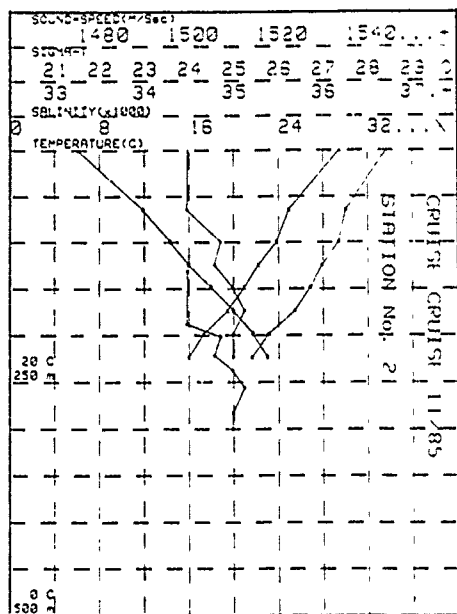


STATION 2		15.185		116.47E		CRUISE 11/85		DEPTH= 5480	
DATE= 29/03/85		TIME= 142000H							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S		
m	°C	Ppt	CL/T	ML/L	°C	M/Sec	L		
0	29.470	34.486	21.523	828.8	0.00	29.47	1544.2		
085	28.810	34.478	22.874	490.4	0.00	24.90	1535.1		
085	28.820	34.454	23.546	433.4	0.00	23.80	1535.5		
085	22.210	34.787	23.998	294.8	0.00	22.18	1529.8		
085	20.950	34.849	24.500	347.7	0.00	20.92	1527.1		
085	19.480	35.132	24.997	301.0	0.00	19.43	1523.8		
085	17.220	34.996	25.458	259.7	0.00	17.28	1517.8		
085	15.880	34.955	25.748	230.3	0.00	15.94	1514.1		
ISL	0	29.47	34.49	21.523	828.8	0.00	29.47	1544.2	0.000
ISL	10	29.55	34.48	21.773	803.3	0.00	29.55	1542.3	.062
ISL	25	27.33	34.48	22.130	599.7	0.00	27.32	1539.9	.150
ISL	50	25.87	34.46	22.878	318.4	0.00	25.86	1536.5	.287
ISL	75	24.74	34.64	23.153	473.8	0.00	24.72	1535.1	.411
ISL	100	23.68	34.85	23.506	433.4	0.00	23.60	1533.5	.525
ISL	150	20.90	35.00	24.521	345.7	0.00	20.87	1527.0	.721
ISL	200	17.25	35.00	25.451	258.3	0.00	17.22	1517.6	.871

STATION 3		15.288		116.35E		CRUISE 11/85		DEPTH= 5475	
DATE= 30/03/85		TIME= 143500H							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S		
m	°C	Ppt	CL/T	ML/L	°C	M/Sec	Oym.m		
0	29.540	34.513	21.520	827.2	0.00	29.54	1544.4		
085	28.480	34.654	22.824	523.8	0.00	26.47	1538.9		
085	22.200	34.995	24.091	308.1	0.00	22.17	1530.0		
085	18.630	35.180	25.154	277.3	0.00	18.58	1521.8		
085	15.980	34.982	25.751	229.8	0.00	15.93	1513.9		
085	14.580	35.052	26.104	196.8	0.00	14.54	1510.2		
ISL	0	29.54	34.51	21.520	827.2	0.00	29.54	1544.4	0.000
ISL	10	29.07	34.53	21.684	810.8	0.00	29.07	1543.8	.062
ISL	25	28.23	34.56	21.943	585.8	0.00	28.23	1542.3	.151
ISL	50	27.03	34.83	22.430	342.0	0.00	27.02	1539.9	.282
ISL	75	25.51	34.71	22.961	482.1	0.00	25.49	1536.9	.422
ISL	100	23.88	34.79	23.498	442.0	0.00	23.84	1533.7	.538
ISL	150	21.15	35.18	24.296	387.8	0.00	21.12	1527.8	.738
ISL	200	18.25	35.15	25.323	270.8	0.00	18.21	1520.8	.895

STATION 4		15.313		116.24E		CRUISE 11/85		DEPTH= 5472	
DATE= 31/03/85		TIME= 141500H							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S		
m	°C	Ppt	CL/T	ML/L	°C	M/Sec	Oym.m		
0	29.810	34.542	21.518	827.4	0.00	29.81	1544.3		
085	29.810	34.542	21.518	827.8	0.00	29.81	1544.7		
085	28.170	34.538	21.643	614.2	0.00	28.17	1543.8		
085	28.820	34.599	21.782	602.3	0.00	28.81	1543.8		
085	28.440	34.875	22.002	582.6	0.00	28.45	1542.9		
085	27.780	34.723	22.237	558.5	0.00	27.78	1541.8		
085	24.820	34.775	23.187	489.4	0.00	24.80	1535.5		
085	22.000	34.827	23.804	412.2	0.00	22.00	1531.3		
ISL	0	29.81	34.54	21.518	827.4	0.00	29.81	1544.3	0.000
ISL	10	29.51	34.54	21.518	827.8	0.00	29.51	1544.7	.063
ISL	25	29.05	34.57	21.731	607.9	0.00	29.04	1543.8	.155
ISL	50	27.49	34.73	22.358	549.1	0.00	27.48	1541.0	.301
ISL	75	24.40	34.78	23.364	453.8	0.00	24.38	1534.4	.428

STATION 5		15.348		116.11E		CRUISE 11/85		DEPTH= 5473	
DATE= 01/04/85		TIME= 073000H							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S		
m	°C	Ppt	CL/T	ML/L	°C	M/Sec	Oym.m		
0	29.850	34.508	21.479	831.1	0.00	29.85	1544.8		
085	29.590	34.510	21.514	828.1	0.00	29.59	1544.3		
085	28.470	34.552	21.572	822.8	0.00	28.47	1544.6		
085	28.830	34.733	21.823	589.7	0.00	28.82	1543.8		
085	28.080	34.734	22.172	566.2	0.00	28.07	1542.1		
085	27.790	34.821	22.521	551.5	0.00	27.78	1541.8		
085	25.280	34.807	23.112	477.8	0.00	25.28	1538.4		
085	23.490	34.807	23.647	427.3	0.00	23.47	1532.5		
085	22.570	34.900	23.982	396.1	0.00	22.55	1530.7		
085	21.740	34.958	24.258	370.8	0.00	21.71	1529.0		
085	20.750	35.045	24.729	328.4	0.00	20.73	1525.6		
085	19.020	34.831	25.240	278.1	0.00	19.00	1518.3		
ISL	0	29.85	34.51	21.479	831.1	0.00	29.85	1544.8	0.000
ISL	10	29.54	34.51	21.520	827.8	0.00	29.54	1544.3	.063
ISL	25	29.05	34.60	21.819	599.5	0.00	29.04	1543.9	.158
ISL	50	27.54	34.82	22.409	544.0	0.00	27.53	1541.2	.288
ISL	75	26.22	34.81	23.213	487.9	0.00	26.20	1535.8	.425
ISL	100	23.29	34.83	23.721	420.4	0.00	23.27	1532.2	.538
ISL	150	21.34	35.01	24.411	358.3	0.00	21.31	1528.2	.730



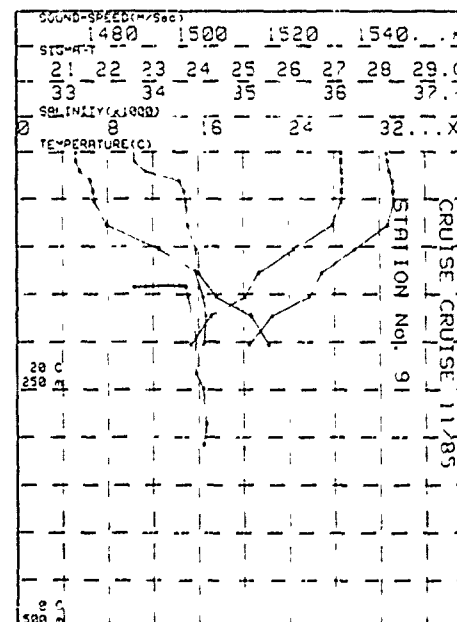
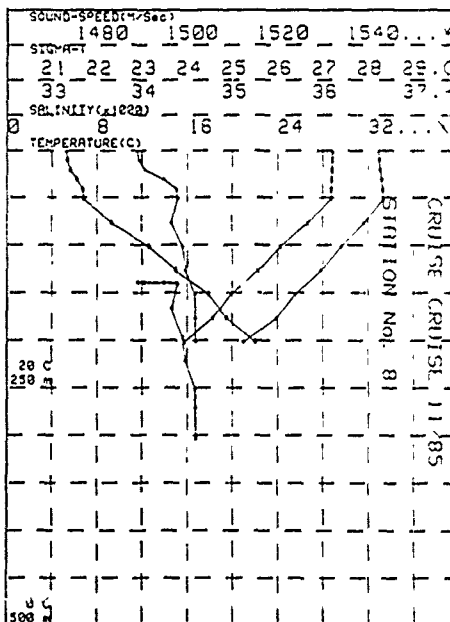
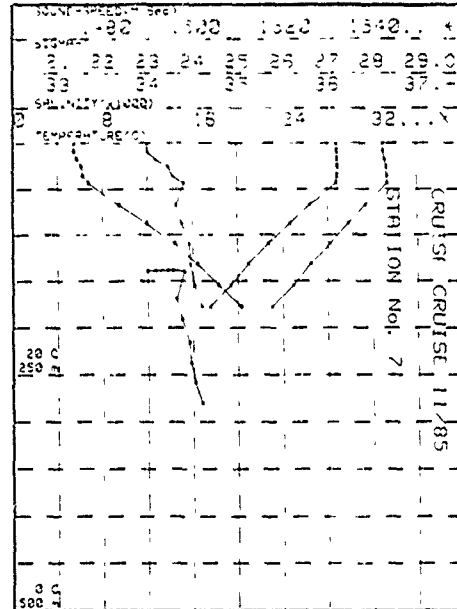
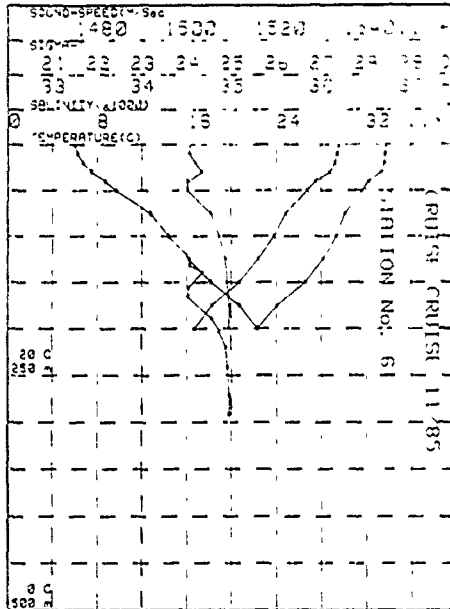


STATION 6		15.318		116.046		CRUISE 11/85		DEPTH#		5470	
DATE= 02/04/85		TIME= 0535GMT									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT.TEMP	S.S				
m	°C	Pps	kg/m <sup>3</sup>	°C	ML/L	°C	R/S/m				
0	29.650	34.538	21.501	828.9	0.00	29.65	1544.8				
10	29.470	34.533	21.558	829.9	0.00	29.47	1544.4				
20	29.250	34.598	21.679	812.7	0.00	29.25	1544.2				
30	29.820	34.674	21.882	793.7	0.00	29.81	1543.3				
40	27.520	34.514	22.187	564.8	0.00	27.51	1540.7				
50	28.770	34.512	22.423	542.4	0.00	28.76	1539.2				
60	28.870	34.775	22.212	488.1	0.00	28.85	1535.5				
100	23.790	34.863	23.601	431.9	0.00	23.77	1533.4				
125	22.400	34.941	24.062	388.8	0.00	22.37	1530.5				
150	20.700	34.957	24.544	343.5	0.00	20.67	1528.4				
175	18.280	34.980	25.188	282.8	0.00	18.25	1520.1				
200	16.680	34.972	25.589	246.8	0.00	16.65	1515.8				
ISL	0	29.65	34.54	21.501	828.9	0.00	29.65	1544.8	0.000		
ISL	10	29.47	34.53	21.558	829.9	0.00	29.47	1544.4	.043		
ISL	25	29.14	34.64	21.768	804.4	0.00	29.14	1544.1	.155		
ISL	50	29.77	34.51	22.423	542.4	0.00	29.76	1539.2	.298		
ISL	75	28.87	34.78	22.212	488.1	0.00	28.86	1535.5	.424		
ISL	100	23.78	34.86	23.601	431.9	0.00	23.77	1533.4	.537		
ISL	150	20.70	34.96	24.544	343.5	0.00	20.67	1528.4	.731		
ISL	200	16.68	34.97	25.589	246.8	0.00	16.65	1515.8	.875		

STATION 7		12.035		106.306		CRUISE 11/85		DEPTH#		5560	
DATE= 12/04/85		TIME= 0837GMT									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT.TEMP	S.S				
m	°C	Pps	kg/m <sup>3</sup>	°C	ML/L	°C	R/S/m				
0	28.860	33.994	21.358	842.7	0.00	28.86	1542.4				
10	28.860	33.994	21.358	843.0	0.00	28.86	1542.5				
18	28.680	34.088	21.422	837.3	0.00	28.68	1542.8				
28	29.900	34.229	21.521	828.1	0.00	29.89	1543.1				
36	28.900	34.282	21.581	824.7	0.00	28.89	1543.4				
44	29.800	34.607	21.888	812.6	0.00	29.79	1543.4				
66	28.450	34.319	22.581	547.4	0.00	28.43	1538.8				
86	24.640	34.378	22.862	490.6	0.00	24.62	1534.7				
110	22.730	34.481	23.604	431.8	0.00	22.71	1530.5				
132	20.150	34.675	24.109	364.3	0.00	20.12	1528.2				
155	19.350	34.518	24.584	341.5	0.00	19.32	1523.3				
178	17.540	34.586	25.077	293.0	0.00	17.51	1517.8				
ISL	0	28.86	33.99	21.358	842.7	0.00	28.86	1542.4	0.000		
ISL	10	28.86	34.00	21.362	842.8	0.00	28.86	1542.5	.084		
ISL	25	28.80	34.22	21.512	846.9	0.00	28.80	1543.1	.180		
ISL	50	28.19	34.37	21.858	598.7	0.00	28.18	1542.2	.313		
ISL	75	23.81	34.34	22.593	527.1	0.00	23.79	1537.2	.455		
ISL	100	23.58	34.43	23.335	497.2	0.00	23.56	1532.4	.578		
ISL	150	19.72	34.51	24.441	351.2	0.00	19.69	1523.2	.779		

STATION 8		12.125		106.178		CRUISE 11/85		DEPTH#		5554	
DATE= 12/04/85		TIME= 0824GMT									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT.TEMP	S.S				
m	°C	Pps	kg/m <sup>3</sup>	°C	ML/L	°C	R/S/m				
0	29.870	33.952	21.323	846.0	0.00	29.87	1542.3				
10	28.650	33.968	21.340	844.8	0.00	28.65	1542.5				
21	28.800	34.032	21.408	836.9	0.00	28.79	1542.8				
31	28.820	34.244	21.559	824.7	0.00	28.81	1543.1				
42	29.750	34.384	21.687	812.8	0.00	29.74	1543.3				
52	29.770	34.354	21.759	811.8	0.00	29.71	1543.4				
77	28.630	34.325	22.329	532.7	0.00	28.61	1539.1				
102	24.230	34.449	23.158	474.3	0.00	24.21	1534.1				
127	22.260	34.684	23.754	418.1	0.00	22.23	1529.8				
152	19.860	34.585	24.479	349.0	0.00	19.86	1523.8				
177	18.310	34.593	24.885	311.5	0.00	18.29	1519.8				
202	15.700	34.593	25.503	252.8	0.00	15.67	1512.4				
ISL	0	29.87	33.95	21.323	846.0	0.00	29.87	1542.3	0.000		
ISL	10	28.65	33.97	21.340	844.8	0.00	28.65	1542.5	.066		
ISL	25	28.82	34.12	21.471	832.8	0.00	28.81	1542.8	.181		
ISL	50	28.73	34.26	21.680	811.8	0.00	28.71	1543.3	.315		
ISL	75	28.81	34.33	22.371	558.1	0.00	28.79	1538.5	.462		
ISL	100	24.61	34.44	23.100	479.7	0.00	24.58	1534.4	.582		
ISL	150	20.05	34.58	24.479	354.3	0.00	20.02	1524.2	.802		
ISL	200	15.95	34.59	25.448	258.3	0.00	15.82	1513.1	.957		

STATION		12.198		106.276		CRUISE 11/85			
DATE= 14/04/85		TIME= 0837GMT						DEPTH# 5400	
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT.TEMP	S.S		
m	°C	Pps	kg/m <sup>3</sup>	°C	ML/L	°C	R/S/m	H/5400	Obs at
005	0	33.787	21.285	848.8	0.00	28.61	1541.8		
010	10	33.789	21.287	849.9	0.00	28.61	1541.8		
015	21	33.819	21.374	841.8	0.00	28.63	1542.2		
020	31	34.293	21.422	816.8	0.00	28.73	1542.9		
025	42	34.342	21.679	813.8	0.00	28.87	1543.1		
030	53	34.381	21.706	811.4	0.00	28.63	1543.2		
035	78	34.383	21.848	525.4	0.00	27.81	1541.9		
040	103	34.472	23.128	477.2	0.00	24.37	1534.5		
045	128	34.474	24.005	394.1	0.00	21.31	1527.2		
050	153	34.548	24.343	357.9	0.00	20.07	1524.4		
055	173	34.585	25.111	283.9	0.00	17.08	1518.2		
060	203	34.558	25.555	247.8	0.00	15.32	1511.3		
ISL	0	28.61	33.79	21.285	848.8	0.00	28.61	1541.8	0.000
ISL	10	28.61	33.79	21.287	849.9	0.00	28.61	1541.8	.045
ISL	25	28.70	34.11	21.486	830.5	0.00	28.69	1542.8	.182
ISL	50	28.67	34.26	21.683	812.6	0.00	28.66	1543.1	.316
ISL	75	28.07	34.38	21.809	582.9	0.00	28.05	1542.3	.466
ISL	100	24.78	34.47	23.005	484.9	0.00	24.76	1535.4	.862
ISL	150	20.29	34.54	24.312	363.5	0.00	20.27	1525.2	.809
ISL	200	15.38	34.57	25.516	251.5	0.00	15.35	1513.4	



## Cruise RANRL 6/85 (SEAMAP 2)

*Notes for cruise 6/85 (SEAMAP 2)**Additional Nansen data for cruise RANRL 6/85 (SEAMAP 2)*

DEPTH (m)	T	S	O <sub>2</sub> (ml/l)	
360	12.57	34.727?	4.52	Station 2
2600?	1.912	34.731	4.25	Station 3
Midway?	1.51	34.877?	4.27	
3515?	1.277	34.735	4.38	
297	10.33	-	-	Station 7
460	-	34.667	5.18	

The depths of 687 m and deeper for station 3 have a degree of uncertainty, in that three bottles were apparently put at wrong depths by 100 m deeper or shallower than intended. It is assumed the winch operator was unfamiliar with the mechanical meter block used, and winch wire out (L) was adjusted accordingly.

*Other sources of data for cruise RANRL 6/85 (SEAMAP 2)*

Hamiiton, L.J. and Boyle, J.A. (1988)

"Oceanographic Data Report for South Pacific Cruises in the SEAMAP series. Part 2: Winter Survey Data".

WSRL Technical Memorandum No.15/89.

Contains XBT cross-sections, satellite SST fields, geostrophic current values, surface samples, thermo-salinograph data, wind vectors, sea state and swell height diagrams, along the cruise track.

Jenkins, C.J., Coleman, R., Keene, J.B., Pritchard, T.R., Manning, P.B. and Schneider, P.M. (1986)

"Geophysical/Geological Results of 'COOK' SEAMAP 6-85 Cruise: South Tasman Sea and Southwest Pacific Ocean".

Report No.20, Ocean Sciences Institute, University of Sydney

Jenkins, C.J., Keene, J.B., Pritchard, T.R. and Schneider, P.M. (1986)

"Seafloor Photography in the Tasman Sea: Results of the 1985 Sydney University/HMAS COOK Program".

Report No.18, Ocean Sciences Institute, University of Sydney

Scott, B.D. (1985)

"RAN Research Laboratory Oceanographic Cruise Report for RANRL 6/85".

(Unpublished document). A narrative of the actual cruise

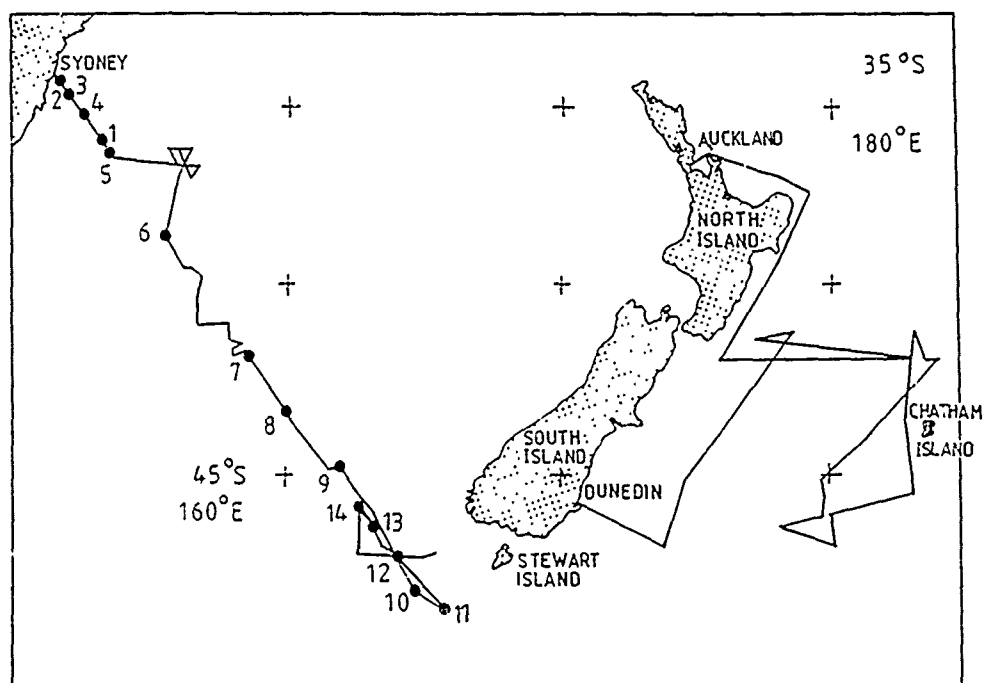


Figure 20. Nansen station positions for cruise RANRL 6/85 (SEAMAP 2)

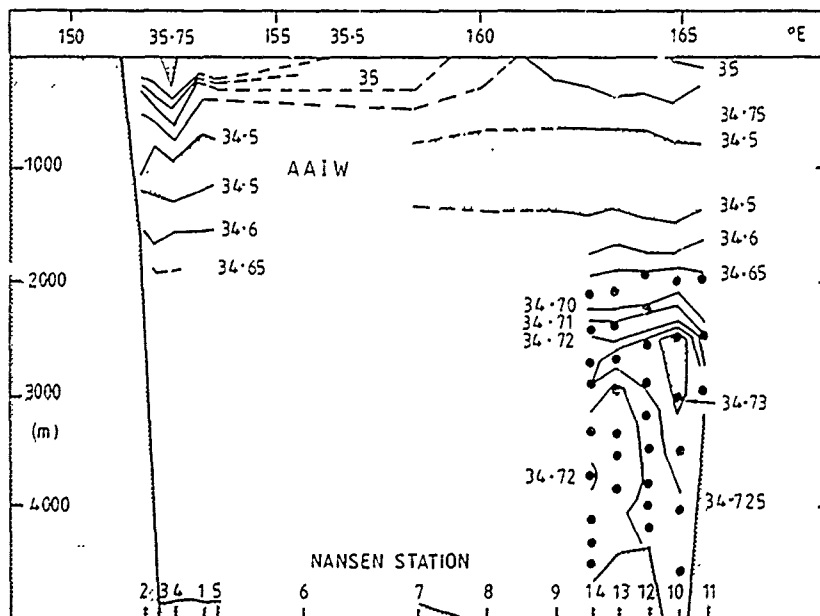
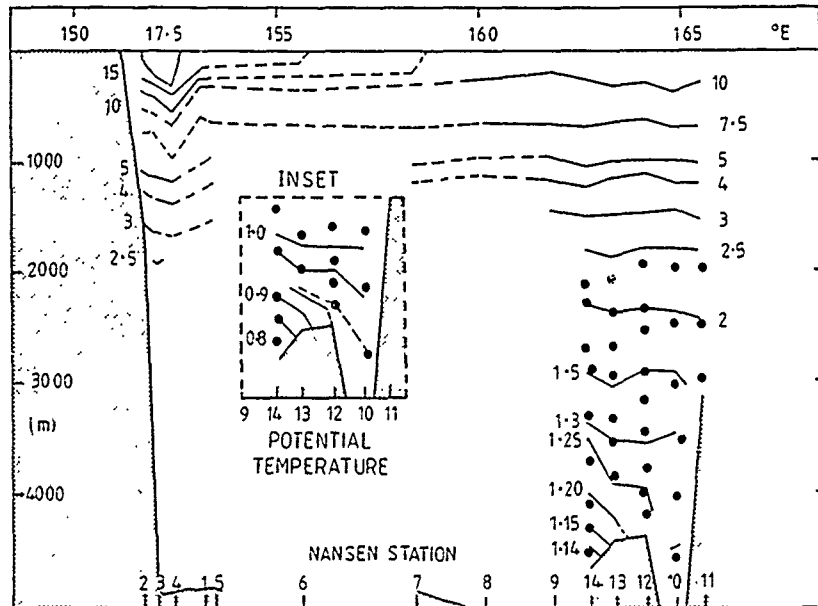


Figure 21. Temperature and salinity cross-sections from Sydney to south of New Zealand in July 1985 for survey RANRL 6/85 (SEAMAP 2)

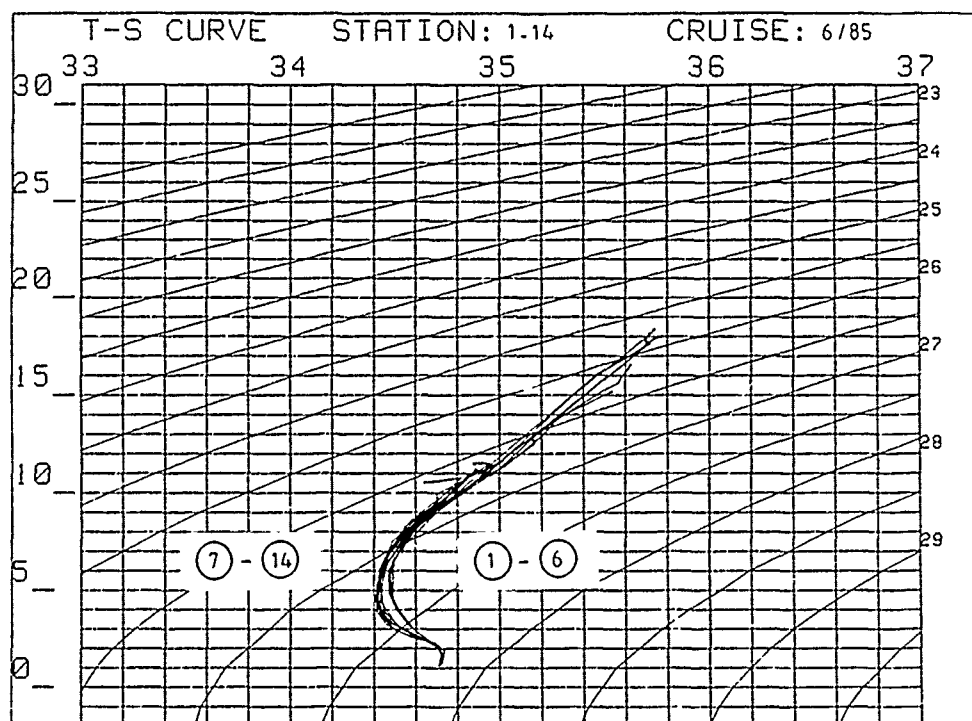


Figure 22. Temperature-salinity curves for cruise RANRL 6/85

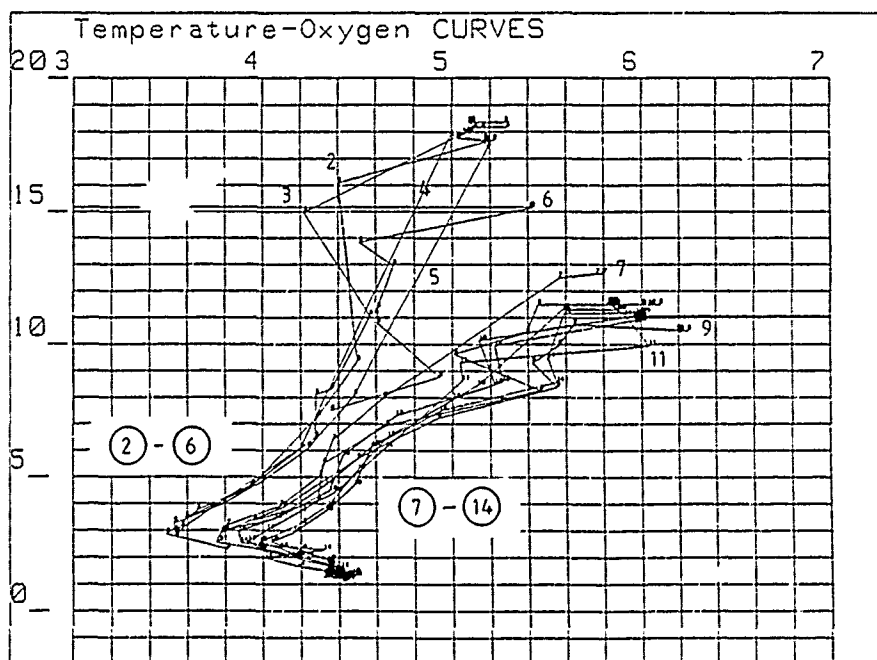
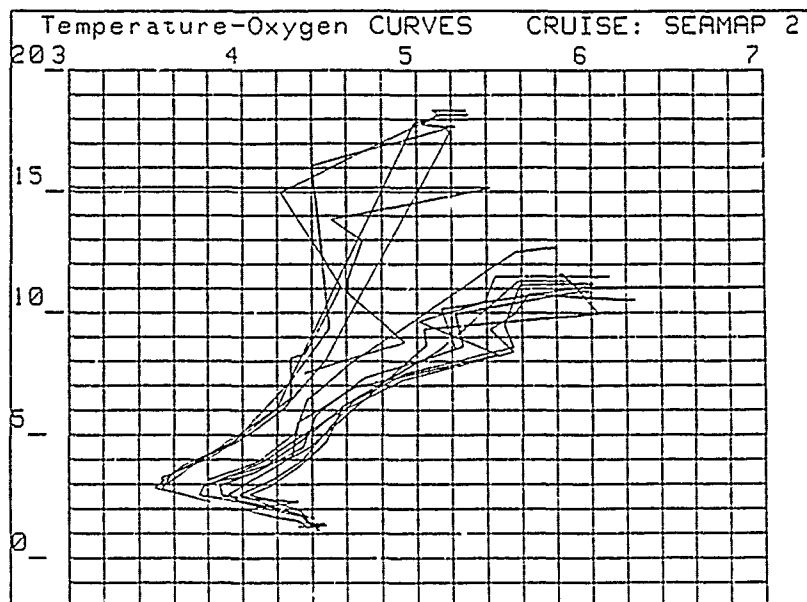
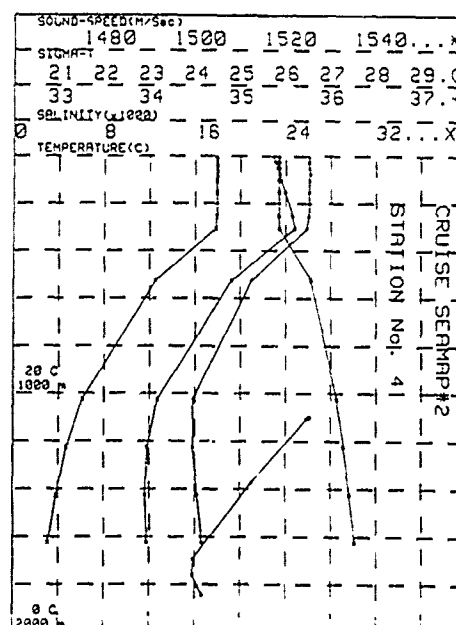
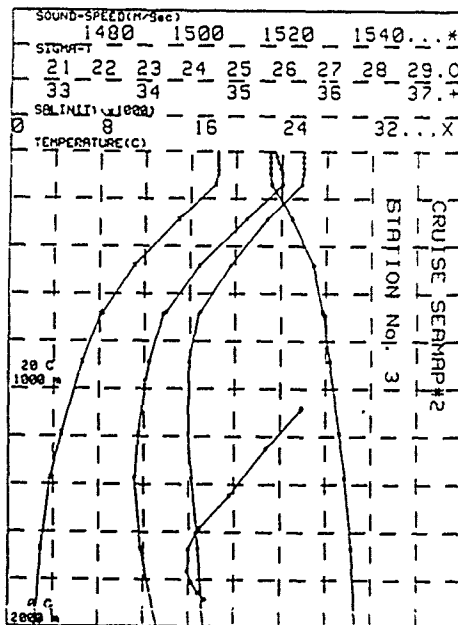
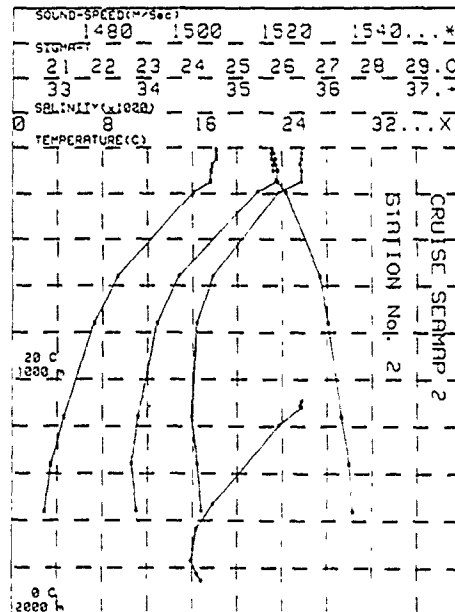
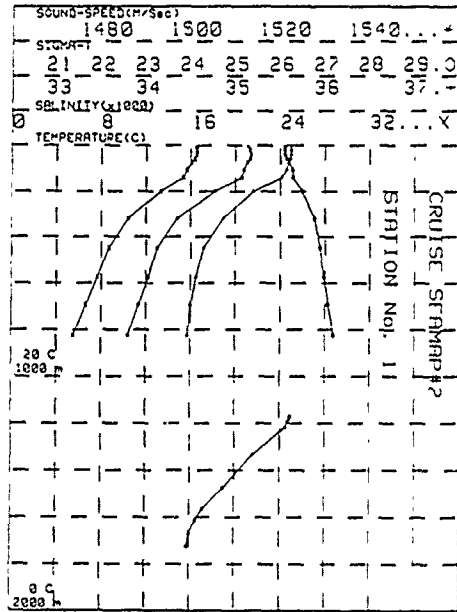


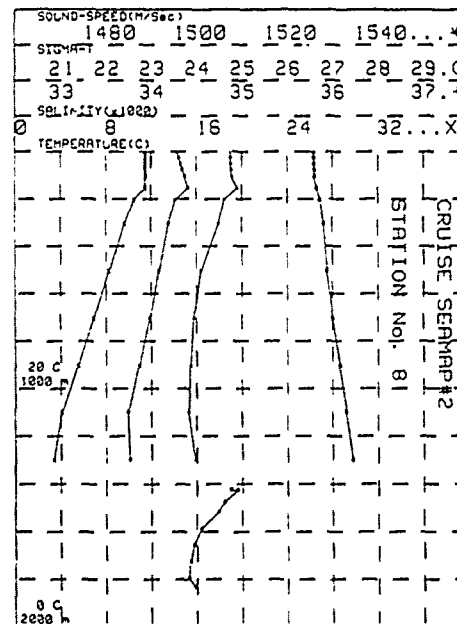
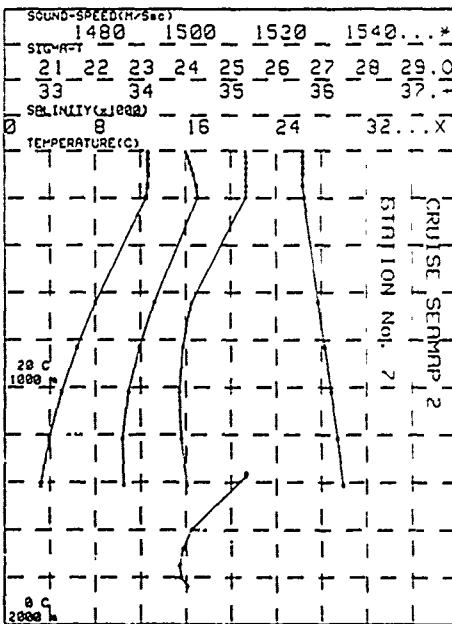
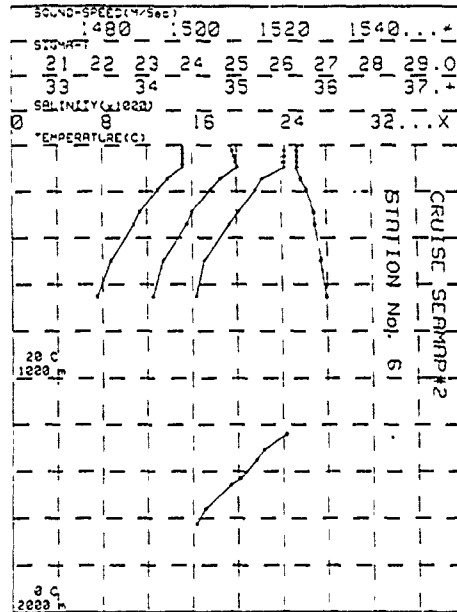
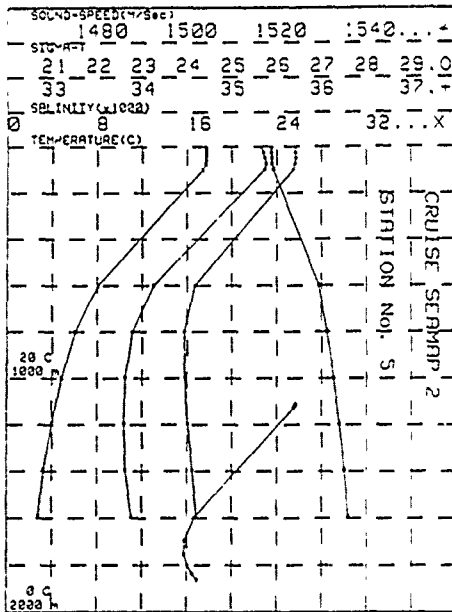
Figure 23. Temperature-oxygen curves for cruise RANRL 6/85



STATION 1											STATION 2										
DATE= 23/07/1983											DATE= 01/08/83										
TIME= 1035GMT											TIME= 1310EST										
SEANAP2											SEANAP2										
DEPTH= 4847											DEPTH= 1700										
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT.TEMP	S.S				DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT.TEMP	S.S			
m	°C	Pps	CL/T	ML/L	°C	H/Sec	Dyn #				m	°C	Pps	CL/T	ML/L	°C	H/Sec	Dyn #			
OBS 0	16.320	35.620	26.105	198.7	0.00	16.32	1512.9				OBS 0	16.180	35.719	25.779	220.7	5.26	16.18	1517.9			
OBS 20	16.350	35.623	26.100	193.8	0.00	16.35	1513.3				OBS 25	16.180	35.719	25.777	221.7	5.18	16.19	1518.3			
OBS 40	16.330	35.620	26.102	191.2	0.09	16.32	1513.3				OBS 50	16.170	35.716	25.779	222.3	5.12	16.18	1518.7			
OBS 58	16.350	35.611	26.108	186.3	0.00	16.34	1512.3				OBS 75	17.790	35.687	25.841	215.4	5.03	17.77	1517.9			
OBS 73	16.080	35.590	26.184	184.3	0.03	16.07	1512.7				OBS 100	17.670	35.713	25.902	212.3	5.18	17.65	1518.0			
OBS 107	15.430	35.536	26.258	177.9	0.00	15.41	1511.8				OBS 148	17.650	35.719	25.910	213.1	5.18	17.62	1518.8			
OBS 140	15.300	35.517	26.291	176.2	0.00	15.34	1511.5				OBS 195	16.090	35.481	26.087	197.5	4.40	16.06	1514.8			
OBS 200	15.310	35.504	26.488	156.7	0.00	15.28	1505.4				OBS 540	9.380	34.729	26.845	150.7	4.30	9.32	1487.0			
OBS 321	10.440	34.867	26.772	133.5	0.00	10.40	1487.1				OBS 780	7.290	34.545	27.020	115.0	4.29	7.21	1482.1			
OBS 448	6.700	34.648	26.886	123.8	0.00	6.65	1482.5				OBS 1180	4.810	34.486	27.314	86.9	3.93	4.51	1487.9			
OBS 575	7.870	34.581	26.938	118.5	0.00	7.81	1490.5				OBS 1360	3.450	34.552	27.485	66.3	3.59	3.33	1486.5			
OBS 664	6.830	34.499	27.073	107.8	0.00	6.58	1486.4				OBS 1540	2.900	34.800	27.375	60.5	3.34	2.79	1487.8			
OBS 823	5.520	34.470	27.184	96.5	0.00	5.49	1486.1														
ISL 0	16.32	35.62	26.105	198.7	0.00	16.32	1512.9	0.000			ISL 0	16.18	35.72	25.779	220.7	5.26	16.18	1517.9	0.000		
ISL 10	16.34	35.62	26.102	190.4	0.00	16.34	1513.1	.019			ISL 10	16.18	35.72	25.778	221.2	5.23	16.18	1518.1	.022		
ISL 25	16.35	35.62	26.101	180.9	0.00	16.34	1513.4	.048			ISL 25	16.19	35.72	25.777	221.7	5.18	16.19	1518.3	.055		
ISL 50	16.48	35.62	26.117	190.2	0.00	16.45	1513.5	.095			ISL 50	16.17	35.72	25.779	222.3	5.12	16.18	1518.7	.111		
ISL 75	16.05	35.59	26.181	183.9	0.00	16.04	1512.8	.142			ISL 75	17.78	35.70	25.841	215.4	5.03	17.77	1517.9	.164		
ISL 100	15.71	35.57	26.236	178.4	0.00	15.39	1512.0	.187			ISL 100	17.67	35.71	25.902	212.3	5.18	17.65	1518.0	.218		
ISL 150	14.98	35.48	26.327	173.1	0.00	14.97	1510.4	.276			ISL 150	17.38	35.71	25.918	212.4	5.14	17.35	1518.6	.325		
ISL 200	13.31	35.20	26.488	156.7	0.00	13.28	1505.4	.358			ISL 200	15.97	35.49	26.101	196.2	4.40	15.94	1514.2	.427		
ISL 250	11.98	35.03	26.628	146.4	0.00	11.85	1501.5	.436			ISL 250	14.66	35.32	26.237	184.3	4.42	14.60	1511.2	.523		
ISL 300	10.85	34.82	26.733	138.7	0.00	10.82	1496.2	.507			ISL 300	13.78	35.20	26.363	173.2	4.43	13.73	1508.3	.615		
ISL 400	9.28	34.71	26.847	127.2	0.00	9.24	1483.9	.630			ISL 400	11.88	34.99	26.582	154.0	4.48	11.81	1503.3	.784		
ISL 500	8.28	34.61	26.923	121.0	0.00	8.24	1481.7	.763			ISL 500	10.23	34.81	26.759	136.3	4.48	10.17	1499.1	.935		
ISL 600	7.45	34.55	26.987	114.8	0.00	7.38	1480.1	.880			ISL 600	8.82	34.68	26.881	127.3	4.48	8.68	1495.8	1.046		
ISL 800	5.73	34.47	27.170	96.8	0.00	5.68	1486.5	1.084			ISL 800	7.00	34.54	27.048	112.8	4.27	6.92	1491.4	1.308		
											ISL 1000	5.82	34.51	27.198	98.3	4.12	5.54	1489.4	1.518		
											ISL 1300	3.73	34.53	27.442	73.7	3.68	3.63	1484.7	1.776		
											ISL 1500	3.00	34.58	27.557	62.2	3.58	2.89	1487.0	1.915		
								</													



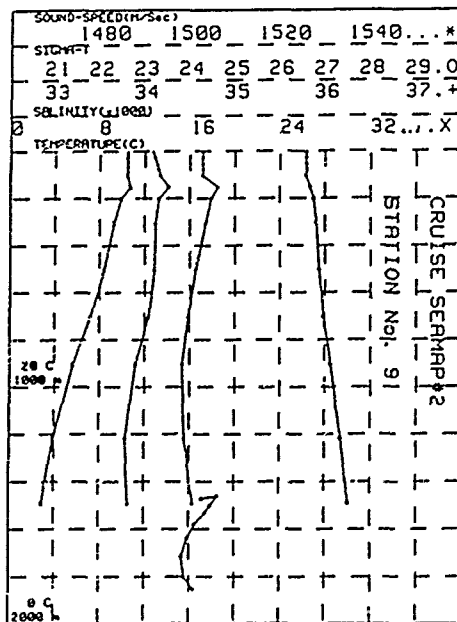
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DEPTH	MC	SALINITY	SIGMA-T	CL/V	CL	POT-TEMP	S.S		
	HC	PART		AL/T	M/L		H/5		Dyn #
008	0	15.180	35.159	28.353	186.2	0.00	15.18	1506.8	
008	25	15.180	35.337	28.347	187.5	5.42	15.18	1506.0	
008	50	15.180	35.336	28.348	188.1	10.84	15.18	1505.1	
008	74	15.180	35.333	28.348	188.8	16.21	15.15	1505.0	
008	97	15.180	35.332	28.348	190.0	8.42	15.5	1510.1	
008	148	13.850	35.282	28.437	187.2	6.1	12.83	1506.4	
008	183	13.850	35.257	28.451	187.8	15.6	12.83	1505.0	
008	286	11.370	35.028	28.728	137.4	4.61	11.33	1500.9	
008	342	10.610	34.818	28.745	136.8	4.61	10.797	1498.8	
008	397	7.870	34.590	28.745	137.0	8.83	7.445	1490.2	
008	654	7.520	34.540	28.943	137.0	12.38	7.445	1486.0	
134	0	15.18	35.34	28.353	186.2	0.00	15.18	1506.8	0.000
134	0	15.17	35.34	28.354	186.8	0.0	15.17	1506.8	.017
134	25	15.18	35.34	28.347	187.5	5.42	15.18	1506.0	.042
134	50	15.17	35.34	28.349	188.1	10.84	15.18	1506.0	.084
134	74	15.18	35.33	28.348	188.8	16.21	15.15	1505.0	.126
134	97	15.18	35.33	28.352	189.9	8.42	15.03	1505.0	.168
134	150	15.07	35.28	28.449	181.3	4.53	12.75	1506.2	.231
134	200	12.83	35.018	28.377	150.2	4.66	12.81	1503.8	.329
134	250	11.67	34.822	28.413	128.2	4.66	11.61	1501.4	.402
134	300	8.23	34.500	28.731	137.4	4.61	11.21	1499.8	.472
134	400	6.94	34.79	28.733	132.8	4.83	9.92	1494.3	.608
134	500	6.94	34.79	28.732	132.8	4.83	8.70	1493.3	.677
134	600	7.87	34.55	28.938	128.2	8.83	7.445	1487.3	.737



STATION	44.425	152.02E	562649E2					
DATE	10/08/1965	TIME = 0500Z	DEPTH = 9999					
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V.	CHI	POT.	TEMP	S.S.
m	°C	Pct	CLYD	ML/L	°C	°C	°C	g/mSec
CMS 0	10.1320	34.645	28.543	164.3	0.25	10.53	1491.9	
CMS 27	10.5320	34.643	28.584	164.9	0.21	10.52	1492.2	
CMS 54	10.644	34.644	28.620	165.8	0.18	10.52	1492.2	
CMS 77	10.5110	34.644	28.586	164.6	0.22	10.50	1493.0	
CMS 105	10.540	34.644	28.584	164.6	0.18	10.53	1493.8	
CMS 153	10.7740	34.618	28.678	162.0	0.66	10.75	1485.9	
CMS 203	9.770	34.700	28.734	158.9	5.18	9.95	1453.3	
CMS 305	9.9320	34.680	28.618	158.3	5.42	9.92	1452.5	
CMS 505	8.5400	34.585	28.672	129.1	5.55	8.85	1406.2	
CMS 766	7.770	34.620	28.700	120.5	5.42	8.05	1380.5	
CMS 905	8.700	34.421	27.133	102.5	4.50	5.62	1346.1	
CMS 1220	3.900	34.444	27.357	81.4	4.11	3.81	1445.9	
CMS 1463	2.928	34.545	27.528	64.4	3.78	2.82	1464.3	
ISL 0	10.53	34.64	28.583	164.3	0.25	10.53	1491.9	0.0000
ISL 10	10.52	34.64	28.583	164.3	0.23	10.52	1492.0	0.0000
ISL 25	10.58	34.64	28.583	164.6	0.21	10.58	1492.2	0.0000
ISL 50	10.64	34.64	28.583	165.5	0.20	10.52	1492.2	0.0000
ISL 75	10.51	34.65	28.587	165.6	0.21	10.50	1493.0	0.0000
ISL 120	10.53	34.63	28.585	164.6	0.21	10.52	1493.5	0.0000
ISL 150	10.53	34.63	28.585	164.6	0.21	10.52	1493.5	0.0000
ISL 200	10.01	34.74	28.732	157.7	5.58	9.98	1459.4	0.0000
ISL 250	9.64	34.71	28.706	130.3	5.48	9.62	1452.9	0.0000
ISL 300	9.25	34.68	28.614	128.5	5.42	9.22	1445.3	0.0000
ISL 350	8.86	34.64	28.580	126.8	5.48	8.87	1442.5	0.0000
ISL 500	8.90	34.57	28.670	122.8	5.55	8.57	1449.2	0.7870
ISL 600	7.40	34.53	28.618	128.2	5.22	7.63	1481.9	0.7870
ISL 800	6.47	34.45	27.054	101.0	4.00	7.40	1449.0	1.2330
ISL 1000	5.63	34.42	27.220	96.8	3.58	5.90	1447.1	1.2330
ISL 1300	3.56	34.47	27.410	76.3	4.01	3.48	1433.1	1.2330

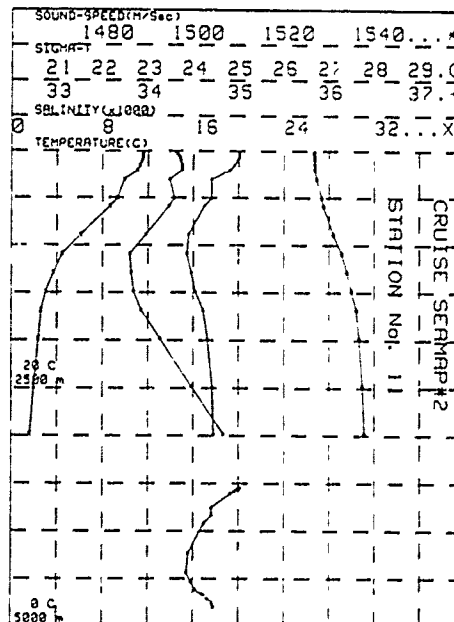
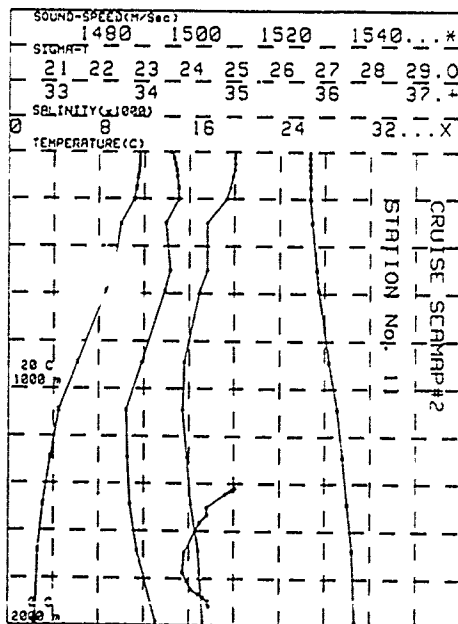
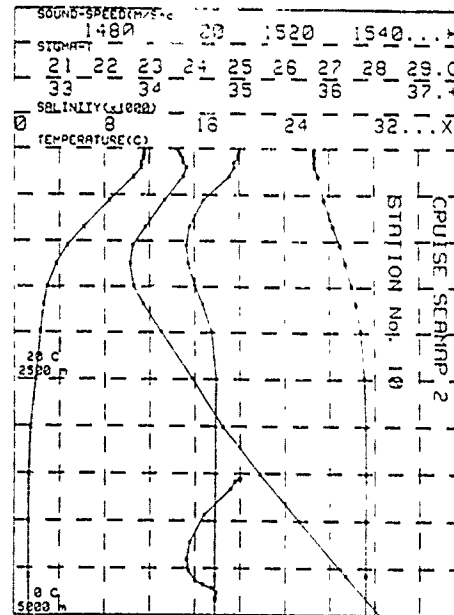
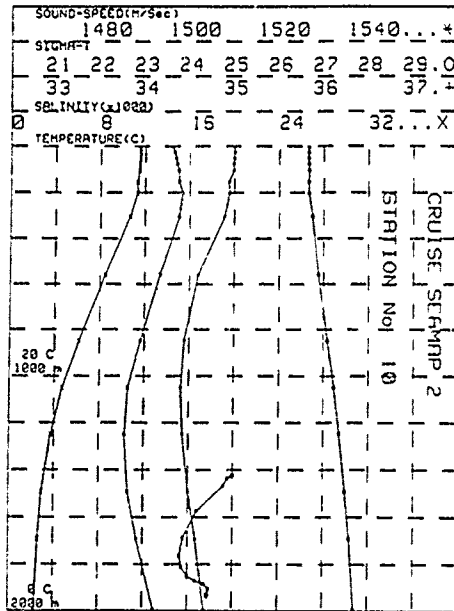
STATION 10		47.445		146.133		SEAMP 2			
DATE= 12/08/83		TIME= 0553ST		DEPTH=		5920			
DEPTH	TEMP	SALINITY	STG	A.S.V.	CHL	POT.	TEMP	S.S	
	°C	Pct	FT-M	CL/T	ML/L	V	°C	N/MSIC	Dyn. M
Obs 0	25.53	35.023	26.871						
Obs 2	28.1159	35.053	26.670	134.7	5.84	11.39		1406.9	
Obs 32	11.5570	33.998	26.680	137.4	5.82	11.50		1406.8	
Obs 37	12.1510	34.960	26.674	137.5	5.85	11.50		1407.0	
Obs 105	11.5500	35.895	26.680	137.5	5.85	11.49		1407.5	
Obs 159	11.320	34.941	26.672	139.6	5.86	11.30		1407.0	
Obs 205	10.5130	34.947	26.678	140.0	5.85	11.28		1406.4	
Obs 250	10.2884	34.948	26.678	140.0	5.82	11.28		1406.8	
Obs 300	8.480	34.601	26.688	125.7	5.13	4.62		1453.5	
Obs 350	8.190	34.448	27.091	87.9	4.58	0.11		1469.1	
Obs 400	8.100	34.408	27.040	87.8	4.58	0.10		1469.1	
Obs 450	7.740	34.431	27.040	81.0	4.33	3.84		1485.8	
Obs 500	7.240	34.503	27.684	67.7	4.18	2.63		1466.9	
Obs 550	6.387	34.587	27.684	58.4	4.08	2.40		1466.9	
Obs 1963	2.300	34.688	27.684	48.0	4.19	2.18		1452.5	
Obs 1963	1.900	34.748	27.770	48.5	4.24	1.72		1409.4	
Obs 2010	1.301	34.731	27.800	38.3	4.39	1.20		1506.4	
Obs 2310	2.884	34.728	27.807	44.0	4.42	0.02		1443.4	
Obs 4005	1.285	34.724	27.804	36.2	4.32	.96		1523.1	
Obs 4505	1.501	34.724	27.803	40.8	4.44	.91		1535.5	
Obs 5181	1.408	34.722	27.748	43.4	4.38	.90		1535.5	
Obs 5580	1.408	34.720	27.782	45.2	4.39	.89		1551.9	
Obs 5780	1.443	34.723	27.782	48.1	4.32	.89		1555.7	

ISL	0	11.54	25.00	26.671	135.9	5.84	11.58	1496.0	0.000
ISL	10	11.54	25.00	26.671	136.3	5.84	11.58	1496.2	0.014
ISL	25	11.54	25.00	26.670	136.7	5.84	11.59	1496.5	0.034
ISL	50	11.54	25.00	26.668	137.4	5.82	11.60	1497.0	0.064
ISL	75	11.51	24.99	26.676	137.5	5.84	11.59	1497.0	0.033
ISL	100	11.51	24.99	26.680	137.6	5.83	11.49	1497.4	0.057
ISL	150	11.33	24.84	26.872	139.5	5.88	11.31	1497.5	0.208
ISL	200	11.31	24.85	26.878	140.1	5.88	11.10	1498.1	0.278
ISL	250	11.33	24.83	26.875	137.8	5.88	11.00	1498.1	0.288
ISL	300	10.99	24.60	26.733	135.0	11.00	10.65	1497.4	0.14
ISL	400	9.82	24.77	26.800	132.1	2.53	9.78	1496.0	0.477
ISL	500	8.96	24.86	26.825	128.4	0.4	8.92	1494.4	0.549
ISL	600	8.13	24.57	26.115	123.4	5.63	8.79	1492.8	0.688
ISL	700	6.03	24.47	27.154	104.0	4.48	6.00	1492.0	0.940
ISL	800	6.03	24.41	27.125	96.4	4.51	4.95	1494.9	1.243
ISL	1300	2.54	24.44	27.298	78.0	4.29	3.44	1485.8	1.938
ISL	1500	2.93	24.51	27.496	67.3	4.15	2.82	1488.8	1.501
ISL	2000	2.98	24.50	27.496	60.9	4.19	2.15	1492.8	0.8
ISL	2500	1.63	24.74	27.779	48.3	4.34	1.71	1501.8	0.268
ISL	3000	1.63	24.74	27.779	48.3	4.34	1.21	1506.1	0.287
ISL	3500	1.29	24.73	27.807	37.8	4.4	1.02	1514.2	0.257
ISL	4000	1.29	24.72	27.804	38.2	4.32	0.88	1523.0	0.235
ISL	4500	1.40	24.72	27.804	40.3	4.32	0.82	1530.4	0.235
ISL	5000	1.34	24.72	27.798	42.6	4.3	0.90	1541.2	0.237
ISL	5500	1.40	24.72	27.783	44.8	4.35	0.89	1550.4	0.315



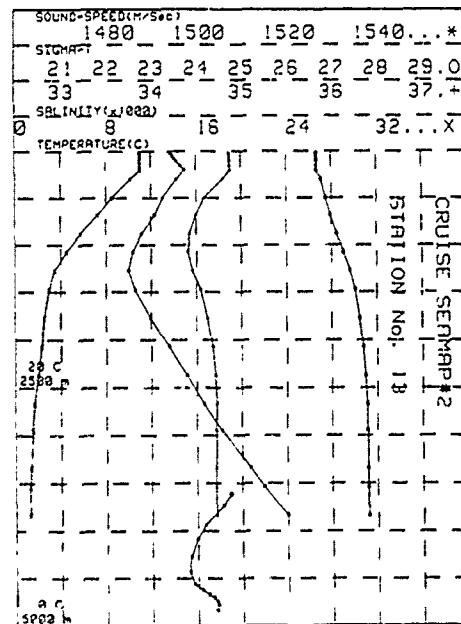
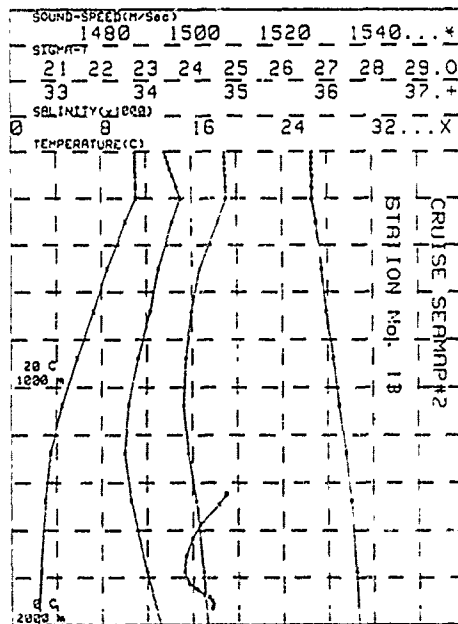
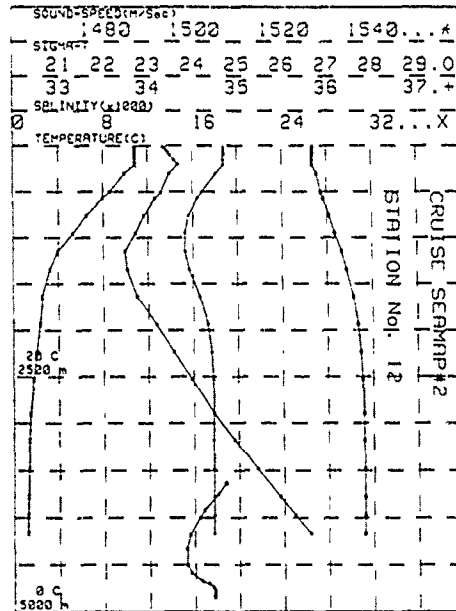
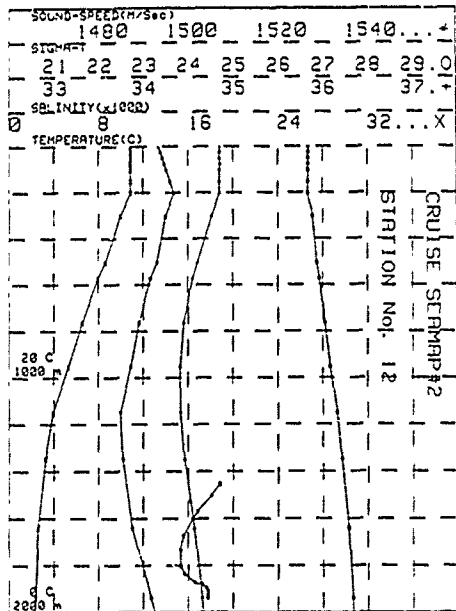
SVT/ION	11	48.155	185.44E	SEANMPS2					
DATE	12/09/1945	TIME = 1237GMT		DEPTH	3135				
DEP#N	TD#P	SALINITY#T	STGM#T	A S V	OX	TEMP#P	S.S		
MC							W/500		
							CLY M		
GAS 0	11.620	35.015	26.477	135.4	5.63	11.00	1484.1		
MC 28		35.008	26.872	134.6	5.62	11.00	1495.5		
ONS 31	11.290	35.011	26.478	134.8	5.62	11.53	1496.9		
ONS 17	11.550	35.005	26.976	137.1	5.62	11.53	1494.9		
ONS 103	11.267	34.967	26.631	137.5	5.63	11.53	1487.3		
ONS 154	11.320	34.957	26.864	136.4	5.67	11.20	1497.6		
ONS 204	11.310	34.911	26.587	136.3	5.91	11.00	1497.6		
ONS 304	9.940	34.703	26.727	137.1	5.56	0.92	1495.2		
ONS 354	9.705	34.705	26.681	137.0	5.50	0.92	1495.6		
ONS 364	9.680	34.622	26.878	137.5	5.05	5.60	1494.7		
ONS 600	6.120	34.447	27.101	107.2	4.65	6.40	1486.5		
ONS 1090	4.970	34.429	27.235	98.8	4.38	4.40	1486.5		
ONS 1290	4.477	34.437	27.399	71.7	4.58	3.82	1486.4		
ONS 1490	2.830	34.523	27.500	57.5	4.02	2.94	1487.0		
ONS 1695	2.610	34.609	27.808	57.5	3.92	2.49	1480.5		
ONS 1895	2.241	34.658	27.967	52.1	3.97	2.24	1480.7		
ONS 2095	1.711	34.711	27.958	45.6	4.08	1.69	1492.6		
ONS 2285	1.622	34.726	27.791	41.3	4.41	1.40	1506.7		

ISL	0	11.60	35.02	28.677	125.4	5.63	11.05	1490.1	0.000
ISL	10	11.60	35.01	28.676	125.9	5.63	11.05	1490.0	0.000
ISL	23	11.60	35.01	28.676	126.5	5.62	11.05	1490.3	0.044
ISL	50	11.59	35.01	28.678	126.8	5.62	11.58	1490.8	0.048
ISL	75	11.59	35.01	28.678	127.1	5.62	11.58	1497.2	0.102
ISL	100	11.47	34.99	28.681	137.4	5.65	11.48	1497.3	0.137
ISL	150	11.33	34.98	28.684	139.6	5.65	11.31	1497.6	0.274
ISL	200	11.11	34.98	28.688	142.8	5.65	11.11	1497.6	0.275
ISL	250	10.91	34.80	28.704	136.3	5.97	10.48	1496.1	0.444
ISL	300	10.00	34.71	28.725	137.2	6.38	9.90	1494.6	0.411
ISL	400	9.82	34.70	28.780	134.1	5.58	9.77	1493.5	0.300
ISL	500	9.26	34.69	28.807	130.7	5.05	9.30	1493.0	0.244
ISL	600	8.61	34.61	28.823	127.0	5.04	8.51	1494.6	0.183
ISL	800	6.67	34.48	28.657	114.2	4.77	6.80	1493.1	1.050
ISL	1000	5.50	34.44	27.708	96.2	4.49	5.02	1487.4	1.284
ISL	1300	3.68	34.44	27.964	79.1	4.18	3.58	1486.4	1.742
ISL	1500	3.04	34.34	27.967	66.7	3.90	2.91	1486.0	1.910
ISL	2000	2.37	34.64	27.670	51.9	3.90	2.22	1482.9	1.850
ISL	2500	1.96	34.71	27.743	45.4	4.71	1.79	1490.8	2.183



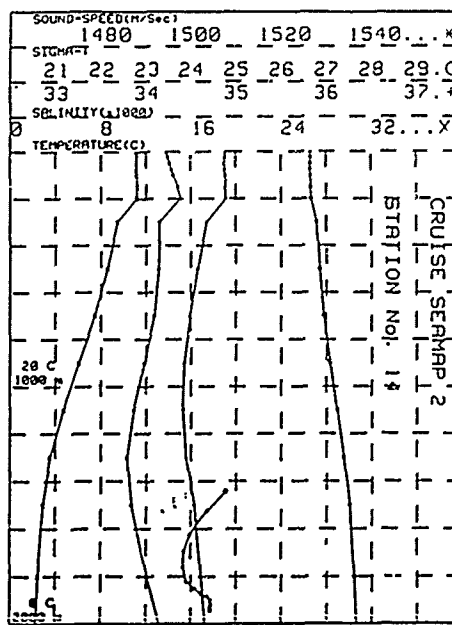
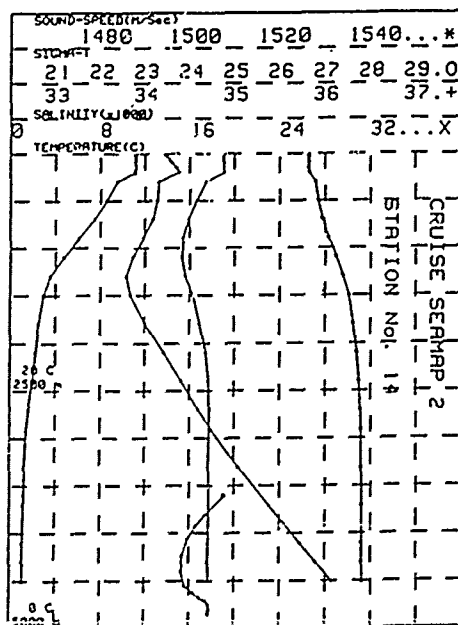
STATION 12		47.005		164.006		SEANAP2		DEPTH 4348	
DATE= 14/08/1985		TIME= 124000H							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OT	POT.TEMP	S.S	Dyn #
m	°C	Ppt		CL/T	ML/L	°C	M/Sec		
OBS 0	10.880	34.852	26.862	134.9	5.87	10.88	1493.4		
OBS 26	10.880	34.852	26.862	135.5	5.87	10.88	1493.8		
OBS 52	10.900	34.853	26.860	136.4	5.99	10.88	1494.3		
OBS 78	10.890	34.858	26.865	136.4	5.98	10.88	1494.7		
OBS 104	10.900	34.854	26.860	137.5	5.87	10.88	1495.1		
OBS 130	10.910	34.851	26.878	139.1	5.98	10.89	1496.0		
OBS 205	10.920	34.854	26.877	140.2	5.98	10.89	1496.9		
OBS 305	9.900	34.785	26.778	132.3	5.22	9.92	1495.0		
OBS 505	8.820	34.608	26.872	128.3	5.28	8.57	1493.1		
OBS 574	7.970	34.554	26.928	121.5	5.00	7.91	1491.7		
OBS 765	6.530	34.450	27.049	111.0	4.68	6.48	1489.1		
OBS 954	5.310	34.412	27.173	99.8	4.50	5.23	1487.3		
OBS 1151	3.940	34.413	27.325	83.9	4.34	3.85	1484.9		
OBS 1349	3.260	34.458	27.428	73.9	4.19	3.18	1485.4		
OBS 1 42	2.580	34.575	27.582	58.0	3.88	2.47	1487.7		
OBS 1938	2.380	34.681	27.671	51.3	4.09	2.22	1491.8		
OBS 2237	2.070	34.706	27.731	45.8	4.18	1.81	1495.7		
OBS 2532	1.798	34.728	27.788	42.1	4.33	1.81	1499.8		
OBS 2900	1.477	34.728	27.782	39.0	4.38	1.27	1504.8		
OBS 3184	1.398	34.723	27.798	38.8	4.39	1.15	1509.1		
OBS 3485	1.213	34.722	27.801	38.5	4.48	1.09	1514.1		
OBS 3780	1.288	34.722	27.804	38.8	4.40	1.37	1518.1		
OBS 3975	1.248	34.724	27.807	38.5	4.44	.83	1522.4		
OBS 4170	1.248	34.721	27.804	39.2	4.37	.81	1525.9		
ISL 0	10.88	34.85	26.862	134.9	5.87	10.88	1493.4	0.000	
ISL 10	10.88	34.85	26.862	135.1	5.87	10.88	1493.3	.014	
ISL 25	10.88	34.85	26.862	135.5	5.87	10.88	1493.8	.034	
ISL 50	10.90	34.85	26.860	136.3	5.99	10.88	1494.3	.068	
ISL 75	10.89	34.86	26.865	136.4	5.98	10.88	1494.6	.102	
ISL 100	10.90	34.85	26.861	137.3	5.97	10.89	1495.1	.136	
ISL 150	10.91	34.85	26.878	138.9	5.98	10.88	1495.9	.205	
ISL 200	10.92	34.85	26.877	14 0	5.98	10.89	1496.8	.275	
ISL 250	10.46	34.81	26.725	136.4	5.58	10.43	1495.8	.344	
ISL 300	10.00	34.77	26.772	132.8	5.24	9.87	1495.0	.412	
ISL 400	9.42	34.89	26.809	131.1	5.24	9.38	1494.5	.343	
ISL 500	8.66	34.61	26.866	128.8	5.28	8.61	1493.2	.871	
ISL 600	7.78	34.54	26.945	120.1	4.84	7.70	1491.3	.794	
ISL 800	6.31	34.44	27.071	109.2	4.83	6.24	1488.8	1.023	
ISL 1000	4.83	34.41	27.213	95.4	4.48	4.84	1486.5	1.229	
ISL 1500	3.41	34.44	27.403	78.4	4.23	3.31	1485.2	1.464	
ISL 1500	2.88	34.52	27.518	68.3	4.04	2.75	1486.3	1.628	
ISL 2000	2.30	34.67	27.685	50.2	4.10	2.18	1492.8	1.911	
ISL 2500	1.82	34.72	27.785	42.5	4.32	1.64	1499.2	2.111	
ISL 3000	1.44	34.72	27.783	38.9	4.38	1.22	1506.2	2.349	
ISL 3500	1.31	34.72	27.801	38.5	4.47	1.04	1514.3	2.538	
ISL 4000	1.25	34.72	27.807	38.8	4.44	.82	1522.2	2.728	

STATION 13		48.205		163.256		SEANAP2		DEPTH 4384	
DATE= 14/08/1985		TIME= 021200H							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OT	POT.TEMP	S.S	Dyn #
m	°C	Ppt		CL/T	ML/L	°C	M/Sec		
OBS 0	11.040	34.871	26.868	138.2	5.99	11.04	1494.0		
OBS 25	11.050	34.871	26.868	137.0	5.97	11.05	1494.4		
OBS 51	11.070	34.878	26.867	137.8	5.98	11.06	1494.9		
OBS 77	11.060	34.878	26.868	138.0	5.95	11.05	1495.3		
OBS 103	11.080	34.878	26.870	138.5	5.95	11.05	1495.7		
OBS 133	11.080	34.800	26.668	139.8	5.95	11.04	1496.8		
OBS 20	11.090	34.883	26.868	140.8	5.97	11.06	1497.5		
OBS 303	10.180	34.794	26.764	133.7	5.14	10.12	1495.7		
OBS 503	8.510	34.585	26.871	128.3	5.22	8.48	1492.8		
OBS 683	7.310	34.496	26.978	117.7	4.70	7.24	1490.9		
OBS 878	5.810	34.428	27.125	104.2	4.42	5.73	1488.1		
OBS 1078	4.500	34.405	27.280	90.8	4.23	4.41	1486.0		
OBS 1278	3.480	34.455	27.407	78.0	4.08	3.38	1485.0		
OBS 1478	2.990	34.548	27.524	65.0	3.78	2.68	1488.3		
OBS 1775	2.570	34.620	27.620	56.2	3.75	2.44	1488.9		
OBS 2074	2.310	34.878	27.589	50.2	3.98	2.18	1493.9		
OBS 2373	2.020	34.711	27.739	45.3	4.15	1.85	1497.8		
OBS 2872	1.700	34.728	27.777	41.2	4.34	1.51	1501.8		
OBS 2950	1.527	34.719	27.783	40.4	4.38	1.31	1505.7		
OBS 3542	1.380	34.716	27.781	39.6	4.38	1.13	1511.8		
OBS 3540	1.299	34.716	27.787	38.9	4.43	1.03	1515.0		
OBS 3834	1.285	34.715	27.798	39.1	4.38	.96	1520.0		
ISL 0	11.04	34.87	26.868	138.2	5.99	11.04	1494.0	0.000	
ISL 10	11.04	34.87	26.867	138.6	5.98	11.04	1494.1	.014	
ISL 25	11.05	34.87	26.868	137.0	5.97	11.05	1494.4	.034	
ISL 50	11.07	34.88	26.867	137.8	5.98	11.06	1494.9	.068	
ISL 75	11.06	34.88	26.868	138.0	5.95	11.05	1495.3	.102	
ISL 100	11.08	34.88	26.870	138.5	5.95	11.05	1495.7	.137	
ISL 150	11.08	34.80	26.668	139.8	5.95	11.06	1496.8	.207	
ISL 200	11.09	34.88	26.868	140.8	5.97	11.06	1497.5	.277	
ISL 250	10.64	34.84	26.717	137.3	5.51	10.61	1496.8	.347	
ISL 300	10.18	34.80	26.762	133.9	5.16	10.15	1495.7	.415	
ISL 400	9.32	34.68	26.814	130.4	5.18	9.27	1494.0	.547	
ISL 500	8.53	34.59	26.889	128.4	5.22	8.48	1492.8	.679	
ISL 600	7.80	34.512	26.928	122.1	4.81	7.82	1491.8	.799	
ISL 800	6.28	34.45	27.068	109.5	4.51	6.31	1488.1	1.031	
ISL 1000	4.87	34.41	27.207	96.1	4.40	4.89	1486.6	1.237	
ISL 1500	3.40	34.47	27.423	78.5	4.02	3.30	1485.2	1.493	
ISL 1500	2.82	34.52	27.522	68.2	3.84	2.84	1486.8	1.631	
ISL 2000	2.38	34.67	27.674	51.8	4.13	2.23	1492.9	1.918	
ISL 2500	1.87	34.72	27.759	43.2	4.25	1.68	1499.4	2.158	
ISL 3000	1.51	34.72	27.784	40.3	4.36	1.29	1506.5	2.382	
ISL 3500	1.31	34.72	27.798	38.0	4.43	1.04	1514.3	2.561	





STATION 14		45-295		162-50		SEMAP 2		DEPTH 4850	
DATE 14/08/85		TIME 1400GMT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CLUT	POT. TEMP	S.S		
m	°C	PSU	kg/m <sup>3</sup>	kg/m <sup>3</sup>	kg/m <sup>3</sup>	°C	kg/m <sup>3</sup>		
005	0	11.190	34.864	28.651	137.9	6.00	11.19	1494.5	0.000
005	25	11.190	34.864	28.651	136.5	6.01	11.18	1494.9	.014
005	51	11.180	34.862	28.651	139.0	6.01	11.17	1495.3	.048
005	77	11.180	34.863	28.652	139.6	5.99	11.17	1495.7	.104
005	102	11.190	34.891	28.657	139.8	6.00	11.18	1496.2	.139
005	152	11.210	34.866	28.649	141.7	5.97	11.19	1497.1	.209
005	201	11.150	34.893	28.665	141.2	5.59	11.12	1497.7	.280
005	300	9.500	34.863	28.799	130.8	5.50	9.47	1493.1	.349
005	500	6.500	34.579	28.655	127.8	5.55	6.53	1492.8	.416
005	700	7.500	34.490	28.947	121.2	4.93	7.43	1491.9	.546
005	900	6.110	34.428	27.087	106.8	4.57	6.03	1490.6	.675
005	1100	4.720	34.412	27.241	93.4	4.33	4.63	1487.3	.801
005	1500	3.590	34.450	27.585	77.7	4.09	3.48	1485.9	1.042
005	1500	2.960	34.540	27.522	65.2	3.87	2.85	1486.8	1.258
005	1800	2.540	34.617	27.620	56.2	3.88	2.41	1490.2	1.527
005	2100	2.290	34.683	27.694	49.8	4.32	2.14	1494.3	1.870
005	2400	2.000	34.717	27.745	44.9	4.01	1.83	1488.2	1.990
005	2700	1.878	34.724	27.776	41.2	4.18	1.48	1502.0	2.197
005	2919	1.507	34.725	27.789	39.5	4.35	1.29	1504.9	2.397
005	3310	1.215	34.718	27.796	38.6	4.58	1.07	1511.0	2.592
005	3710	1.238	34.722	27.805	38.0	4.42	.95	1517.7	2.787
005	4110	1.185	34.718	27.806	38.3	4.42	.85	1524.5	2.979
005	4310	1.131	34.712	27.804	38.5	4.44	.80	1527.9	
005	4510	1.134	34.713	27.806	38.6	4.42	.78	1531.4	
ISL	0	11.19	34.86	28.651	137.9	6.00	11.19	1494.5	0.000
ISL	10	11.19	34.86	28.651	138.1	6.01	11.19	1494.7	.014
ISL	15	11.19	34.86	28.651	138.5	6.01	11.19	1494.9	.035
ISL	50	11.18	34.86	28.651	139.0	6.01	11.17	1495.3	.048
ISL	75	11.18	34.86	28.652	139.6	5.99	11.17	1495.7	.104
ISL	100	11.19	34.89	28.656	139.7	6.00	11.18	1496.1	.139
ISL	150	11.21	34.89	28.649	141.6	5.96	11.19	1497.0	.209
ISL	200	11.18	34.89	28.665	141.3	5.80	11.15	1497.7	.280
ISL	250	10.23	34.78	28.734	135.4	5.54	10.20	1495.0	.349
ISL	300	9.50	34.68	28.799	130.9	5.50	9.47	1493.1	.416
ISL	400	9.06	34.63	28.819	129.8	5.53	9.02	1493.0	.546
ISL	500	8.56	34.58	28.855	127.8	5.55	8.53	1492.8	.675
ISL	600	8.08	34.53	28.889	125.2	5.21	8.02	1492.5	.801
ISL	800	6.81	34.45	27.015	115.7	4.74	6.73	1490.6	1.042
ISL	1000	5.29	34.41	27.164	101.0	4.49	5.20	1488.4	1.258
ISL	1200	3.58	34.45	27.283	77.7	4.08	3.48	1485.9	1.527
ISL	1500	2.96	34.54	27.522	65.2	3.87	2.85	1486.8	1.870
ISL	2000	2.36	34.68	27.672	51.8	4.28	2.23	1492.9	1.990
ISL	2500	1.88	34.72	27.737	43.5	4.08	1.70	1499.4	2.197
ISL	3000	1.45	34.72	27.790	38.3	4.33	1.23	1506.2	2.397
ISL	3500	1.28	34.72	27.801	38.2	4.40	1.01	1514.2	2.596
ISL	4000	1.20	34.72	27.806	38.1	4.42	.88	1522.7	2.787
ISL	4500	1.13	34.71	27.806	38.6	4.42	.78	1531.3	2.979



**Cruise RANRL 3/85***Notes for cruise RANRL 3/86*

This was a single station taken during a cruise which deployed a current meter on the Lord Howe Rise. The current meter was not recovered. The station position is plotted on page 98.

*Additional Nansen data for cruise RANRL 3/86*

DEPTH (m)	T	S	
93	18.32	-	Station 1

(The salinity sample bottle had no seal in the cap)

*Other sources of data for cruise RANRL 3/86*

This station was used to make a comparison with a temperature measurement at the same site in 1838.

See Jones, J.E. and Jones, Ian S.F. (1988)

"Physical Oceanography in the Oceans around Australia before 1850".

Deutsche Hydrographische Zeitschrift

Scott, B.D. (1986)

"RAN Research Laboratory Oceanographic Cruise Report for RANRL 3/86".

(Unpublished document). A narrative of the actual cruise.

**Cruise RANRL 6/86***Notes for cruise RANRL 6/86*

A single station was taken while repairs were being made to the CTD on HMAS Cook. This cruise was also known as RANRL 14/85. The position of the station is plotted on page 98.

*Additional Nansen data for cruise RANRL 6/86*

DEPTH (m)	T	S
?	6.09	34.469

Also note that the depth in the tables of 709 m is uncertain and could be as low as 688 m ( $699 \pm 10$  m).

*Other sources of data for cruise RANRL 6/86*

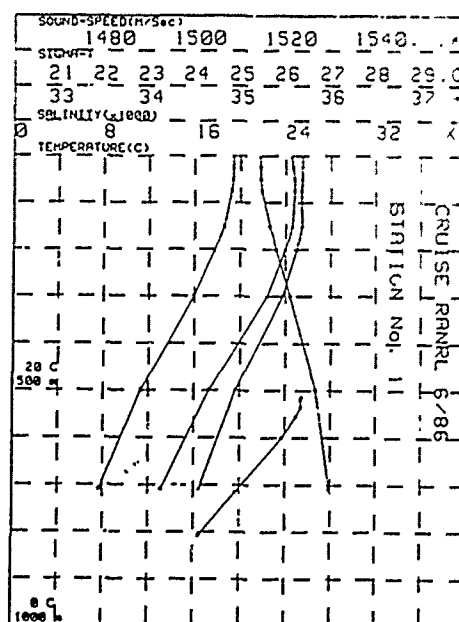
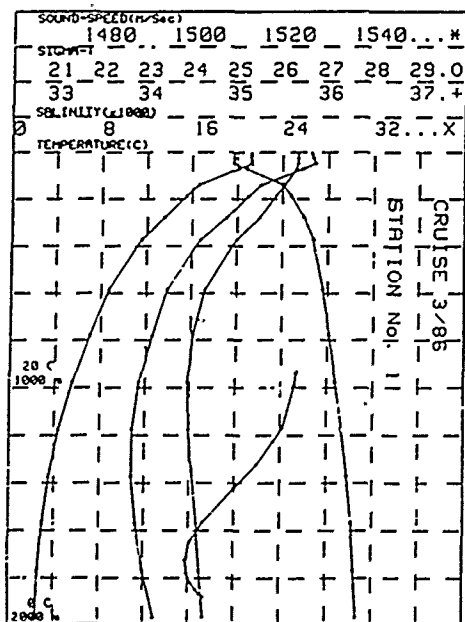
Scott, B.D. (1986)

"Physical Oceanography of the Northern Tasman Sea and Tests of Geoacoustical Equipment (ADOBE)".

RANRL Experimental Report No.14/85. HMAS Cook, 13 to 22 September 1986. A narrative of the actual cruise.

STATION 1 DATE 01/09/86									
TIME 013000H									
DEPTH 2500									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL	POT-TEMP	S.S	DYN	
m	°C	Ppt	CL/T	ML/L	°C	Ppt	ML/Sec		
0	21.280	35.673	24.831	301.3	0.00	21.28	1526.3		
05	21.270	35.672	24.833	302.1	0.00	21.27	1526.7		
10	21.260	35.675	24.837	303.3	0.00	21.26	1527.2		
15	20.150	35.653	25.221	278.2	0.00	20.15	1524.5		
20	18.600	35.528	26.014	202.8	0.00	18.60	1515.3		
25	15.500	35.428	26.191	187.2	0.00	15.50	1512.8		
30	13.530	35.232	26.481	181.7	0.00	13.53	1507.5		
35	11.510	34.996	26.879	164.2	0.00	11.51	1501.8		
40	8.680	34.655	26.899	125.3	0.00	8.68	1494.7		
45	7.040	34.522	27.037	113.3	0.00	7.04	1491.4		
50	5.550	34.473	27.182	96.5	0.00	5.55	1488.7		
55	4.290	34.490	27.338	84.1	0.00	4.29	1487.2		
60	3.560	34.536	27.462	71.9	0.00	3.56	1487.1		
65	2.990	34.589	27.556	62.4	0.00	2.99	1486.1		
70	2.610	34.630	27.625	55.8	0.00	2.61	1486.8		
75	2.300	34.670	27.678	51.2	0.00	2.30	1487.4		

STATION 1 DATE 01/09/86									
TIME 0015 CDT									
DEPTH 2200									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL	POT-TEMP	S.S	DYN	
m	°C	Ppt	CL/T	ML/L	°C	Ppt	ML/Sec		
0	19.419	35.489	25.446	252.5	0.00	19.42	1521.2		
05	19.358	35.488	25.458	252.8	0.00	19.36	1521.5		
10	19.378	35.486	25.451	253.6	0.00	19.38	1522.2		
15	19.228	35.475	25.479	251.8	0.00	19.23	1522.8		
20	18.578	35.482	25.489	238.2	0.00	18.58	1521.5		
25	17.758	35.427	25.683	224.9	0.00	17.76	1520.8		
30	15.978	35.468	26.111	198.4	0.00	15.98	1516.3		
35	11.358	34.758	26.872	147.7	0.00	11.36	1503.5		
40	7.658	34.581	26.975	119.8	0.00	7.66	1492.8		



## Cruise RANRL 1/87

*Notes for cruise RANRL 1/87*

Twenty-one oceanographic stations were occupied, with Nansen bottles strung on the same wire as the CTD, to obtain continuous temperature profiles, and discrete salinity values. This procedure was employed to try to obtain an indirect salinity calibration for the CTD conductivity. The strumming of the thicker than usual wire caused many failures or partial failures of the Nansen bottles. A good conductivity calibration was obtained since it takes the form of a linear adjustment of the form  $y = mx + c$ , where  $m$  (slope) and  $c$  (constant) are fixed. The procedure of stringing Nansen bottles on the CTD wire was successful for only one in three bottles on average, with many deep bottles pre-tripping. This led to many additional incomplete Nansen bottle sets, with such sets not being included in the tables.

A T-S polynomial was fitted to good Nansen data sets and used to find missing T and S values for the Nansen data. These interpolated values are not included in the tables of Nansen data, but they are included in the plots.

The T-S polynomial found was:

$$S = a + bt + ct^2 + dt^3 + et^4 + ft^5 + gt^6$$

where

$$a = 3.45284 \times 10$$

$$b = 2.51311 \times 0.1$$

$$c = -1.288838 \times 0.1$$

$$d = 2.259455 \times 0.01$$

$$e = -1.726492 \times 0.001$$

$$f = 6.187096 \times 10^{-5}$$

$$g = -8.566285 \times 10^{-7}$$

Range 2.5 to 19.5°C

Standard error of estimate of 0.02053 PSU.

*Additional Nansen data for cruise RANRL 1/87*

Only one Nansen bottle was used at station one, a test CTD station. The surface values shown for station one are from a surface bucket salinity sample, and stem thermometer. The station number was retained to coincide with the CTD measurements made concurrently. Values in brackets shown below are calculated from the T-S polynomial, or taken from the CTD value. Unbracketed values are good Nansen bottle values.

DEPTH (m)	T	S	
890	(8.19)	34.607	Station 5
1088	(5.11)	34.485	
2077	(2.31)	34.679	
1740	2.55	(34.64)	Station 7
900	(6.50)	34.493	Station 10
102	21.14	-	Station 11 Many salinity samples were lost for stations 11 and 12 when the bottom fell out of a sample box.
150	20.82	-	
200	18.74	(35.64)	
300	15.88	(35.45)	
698	8.57	(34.65)	
1084	5.19	(34.48)	
1284	4.13	(34.53)	
1482	3.491	(34.57)	
1578	3.192	(34.59)	

DEPTH (m)	T	S	
26	21.98	(35.587)	Station 12
52	21.98	(35.587)	In mixed layer.
102	21.48	-	
150	19.30	(35.66)	
200	18.17	(35.61)	
300	15.17	(35.39)	
453	11.72	(35.03)	
632	8.66	(34.66)	
995	5.76	(34.48)	
932	5.87	(34.48)	Station 13
892	(6.79)	34.505	Station 17
1553	3.256	(34.59)	Station 18
25?	20.12	35.746	Station 19
50?	20.10	35.747	In mixed layer.
75?	20.12	35.749	
2031	2.138	-	Station20

Any work on the data set is best done with a combination of the Nansen, T-S polynomial, and CTD data, as the CTD also suffered conductivity failures at some stations. This approach yielded good results.

*Other sources of data for cruise RANRL 1/87*

Mulhearn, P.J., Hamilton, L.J., and Scott, B.D. (1989)  
 "Deep Structure of the East Australian Current and Tasman Front".  
 WSRL Tech. Memo. 7/89.

Scott, B.D. (1987)  
 "RAN Research Laboratory Oceanographic Cruise report for RANRL 1/87".  
 (Unpublished document). A narrative of the actual cruise.

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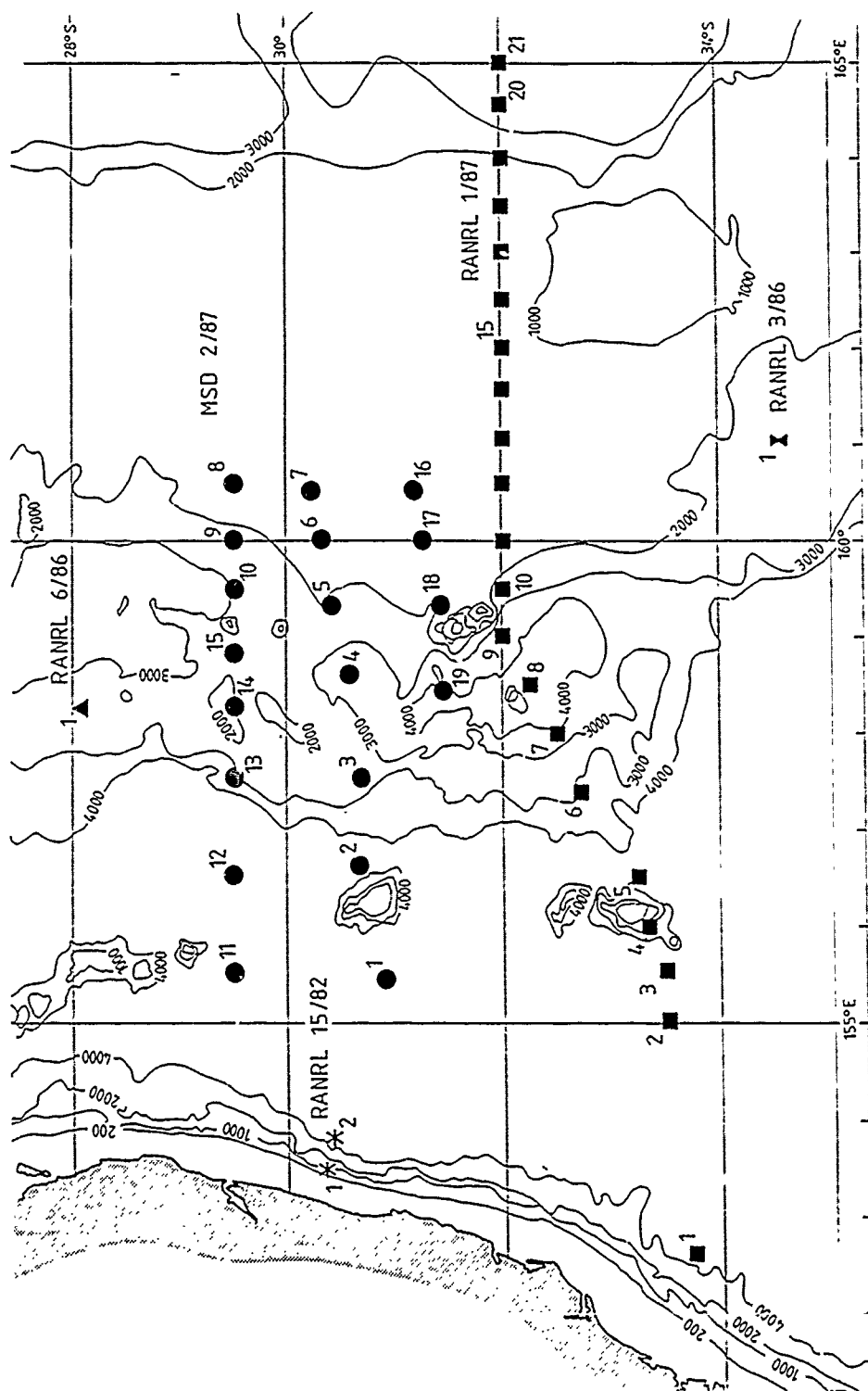


Figure 24. Nansen station positions for survey RANRL 1/87

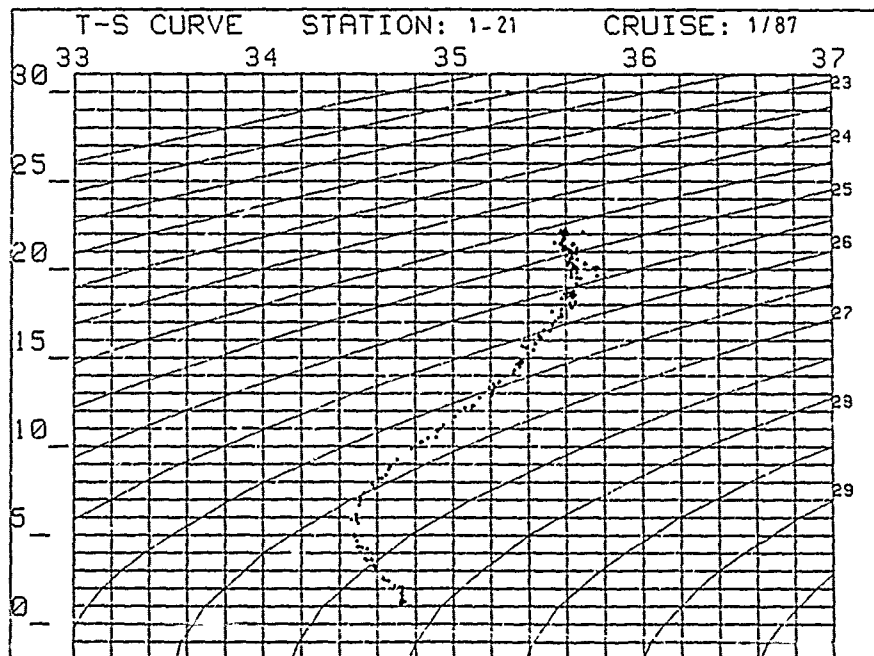
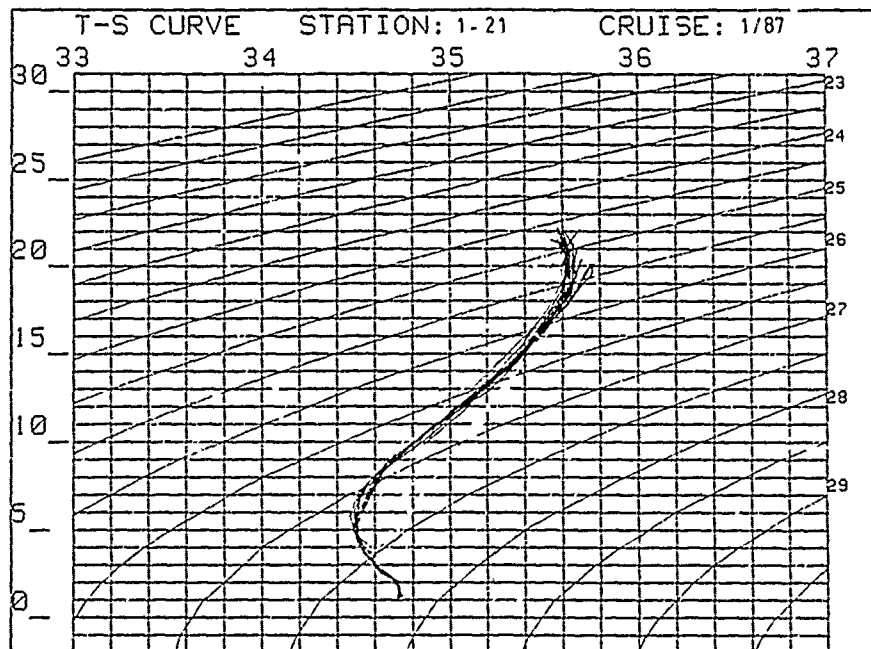


Figure 25. Temperature-salinity curves and scatter plot for cruise RANRL 1/87

STATION 1 DATE= 25/05/87									
33.463		152.346		RAWRL 1/87		DEPTH= 4500			
TIME= 0730 GHT									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	POT. TEMP	S.S	Dyn. m
m	°C	Ppt	°C	CL/T	°C	M/Sec			
088 1186	5.030	34.481	27.200	83.3	0.00	4.83	1490.1		

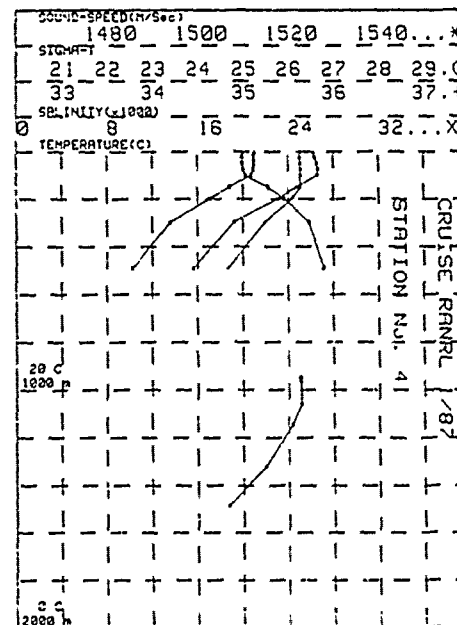
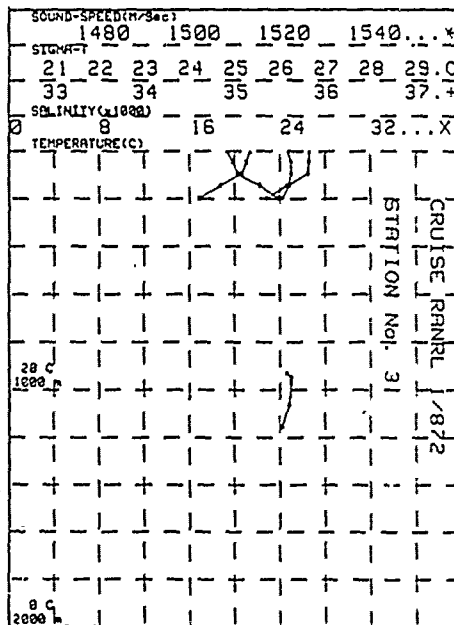
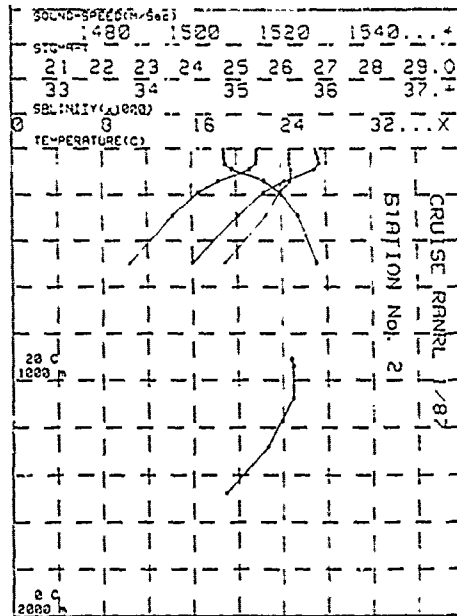
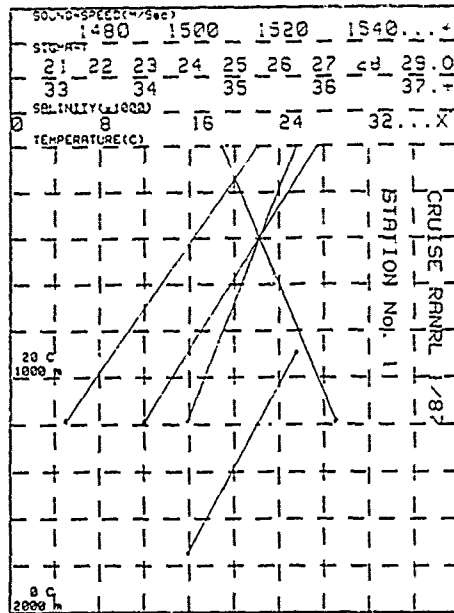
  

STATION 2 DATE= 26/05/87									
33.225		155.036		RAWRL 1/87		DEPTH= 4850			
TIME= 0425 GHT									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	POT. TEMP	S.S	Dyn. m
m	°C	Ppt	°C	CL/T	°C	M/Sec			
088 0	21.810	35.596	24.725	320.9	0.00	21.81	1527.8	0.000	
088 22	21.780	35.596	24.734	320.9	0.00	21.78	1527.9		
088 43	21.770	35.594	24.735	321.6	0.00	21.76	1528.2		
088 66	21.669	35.595	24.758	320.3	0.00	21.68	1528.4		
088 83	21.180	35.617	24.821	305.7	0.00	21.18	1527.5		
088 143	18.450	35.610	23.828	239.9	0.00	18.42	1525.9		
088 193	16.570	35.443	23.986	207.0	0.00	16.54	1516.0		
088 293	14.310	35.329	20.378	172.3	0.00	14.27	1510.4		
088 486	10.450	34.866	20.770	137.8	0.00	10.39	1500.0		
194 0	21.81	35.60	24.725	320.9	0.00	21.81	1527.8	0.000	
194 10	21.79	35.60	24.730	320.8	0.00	21.79	1527.8	.032	
194 25	21.78	35.60	24.734	321.1	0.00	21.77	1528.0	.080	
194 50	21.75	35.59	24.742	321.2	0.00	21.74	1528.4	.181	
194 75	21.60	35.60	24.781	317.4	0.00	21.58	1528.3	.241	
194 100	20.73	35.62	25.041	294.5	0.00	20.71	1526.5	.318	
194 150	18.18	35.59	25.680	154.8	0.00	18.15	1520.1	.450	
194 200	16.40	35.47	25.019	204.1	0.00	16.37	1515.8	.598	
194 250	15.23	35.40	26.225	186.8	0.00	15.21	1512.8	.637	
194 300	14.16	35.32	26.298	170.3	0.00	14.12	1510.0	.748	
194 400	12.17	35.11	26.648	148.1	0.00	12.11	1504.8	.908	

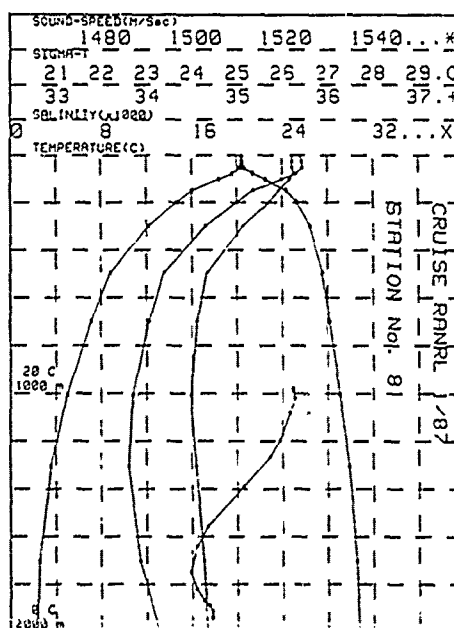
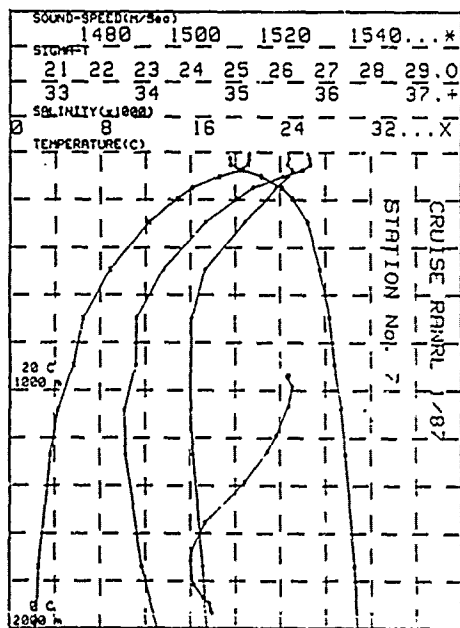
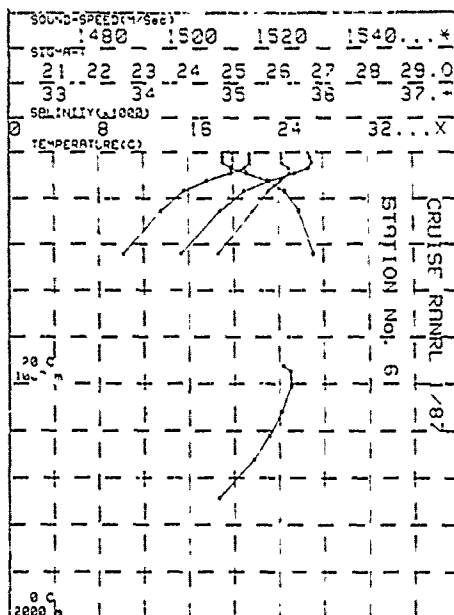
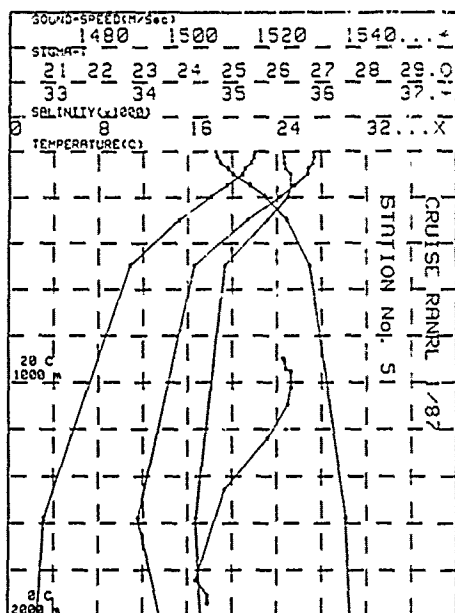
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33.285		155.326		RAWRL 1/87		DEPTH= 4880			
TIME= 0705 GHT									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	POT. TEMP	S.S	Dyn. m
m	°C	Ppt	°C	CL/T	°C	M/Sec			
088 0	21.370	35.583	24.838	310.2	0.00	21.37	1526.5		
088 45	21.040	35.628	24.857	300.5	0.00	21.04	1526.5		
088 85	20.650	35.637	25.048	291.8	0.00	20.63	1526.2		
088 145	18.720	35.606	25.559	248.6	0.00	18.69	1521.7		
088 199	16.880	35.528	25.954	210.4	0.00	16.83	1517.0		
194 0	21.37	35.58	24.838	310.2	0.00	21.37	1526.5	0.000	
194 10	21.31	35.60	24.844	307.9	0.00	21.30	1526.5	.031	
194 25	21.20	35.61	24.906	304.6	0.00	21.20	1526.5	.077	
194 50	21.02	35.63	24.946	299.6	0.00	21.01	1526.4	.152	
194 75	20.81	35.63	25.023	295.3	0.00	20.80	1526.3	.227	
194 100	20.45	35.62	25.122	286.7	0.00	20.43	1525.7	.300	
194 150	18.54	35.60	25.601	242.7	0.00	18.51	1521.2	.432	

STATION 4 DATE= 26/05/87									
33.215		156.016		RAWRL 1/87		DEPTH= 2850			
TIME= 2029 GHT									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	ML/L	POT. TEMP	S.S	Dyn. m
m	°C	Ppt	°C	CL/T	°C	M/Sec			
088 0	21.010	35.630	24.972	297.4	0.00	21.01	1525.8		
088 25	20.990	35.632	24.990	297.8	0.00	20.99	1525.9		
088 50	21.000	35.637	24.980	296.5	0.00	20.99	1526.4		
088 75	20.930	35.639	25.001	297.4	0.00	20.92	1526.6		
088 120	20.770	35.637	25.056	293.0	0.00	20.70	1526.5		
088 150	19.790	35.642	25.587	246.0	0.00	19.76	1522.0		
088 199	17.090	35.544	25.815	216.5	0.00	17.05	1517.7		
088 299	13.570	35.245	26.487	163.5	0.00	13.53	1506.0		
088 481	10.240	34.825	26.782	134.1	0.00	10.16	1499.1		
194 0	21.01	35.63	24.972	297.4	0.00	21.01	1525.8	0.000	
194 10	21.00	35.63	24.976	297.5	0.00	21.00	1525.7	.030	
194 25	20.99	35.63	24.980	297.6	0.00	20.99	1525.9	.074	
194 50	21.00	35.64	24.980	296.5	0.00	20.99	1526.4	.149	
194 75	20.93	35.64	25.001	297.4	0.00	20.92	1526.6	.223	
194 100	20.72	35.64	25.056	293.0	0.00	20.70	1526.5	.297	
194 150	19.79	35.64	25.587	246.0	0.00	19.76	1522.0	.432	
194 200	17.05	35.54	25.818	215.9	0.00	17.02	1517.8	.547	
194 250	15.14	35.38	26.228	185.4	0.00	15.10	1511.3	.648	
194 300	13.54	35.24	26.471	163.1	0.00	13.50	1507.8	.735	
194 400	11.26	35.00	26.756	137.5	0.00	11.20	1501.7	.882	

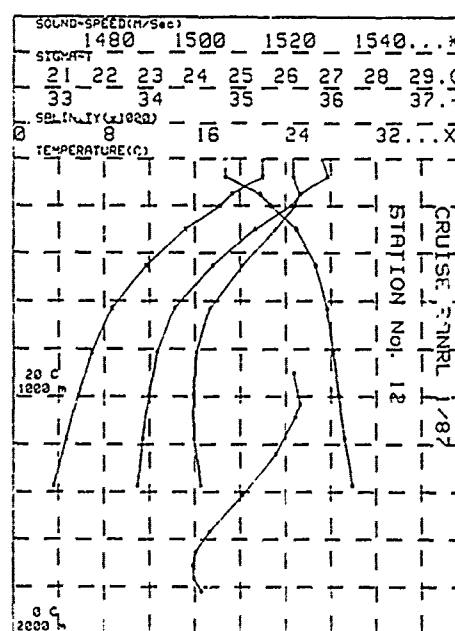
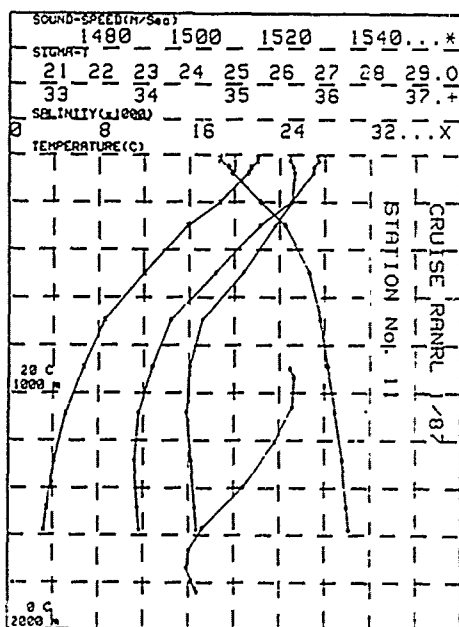
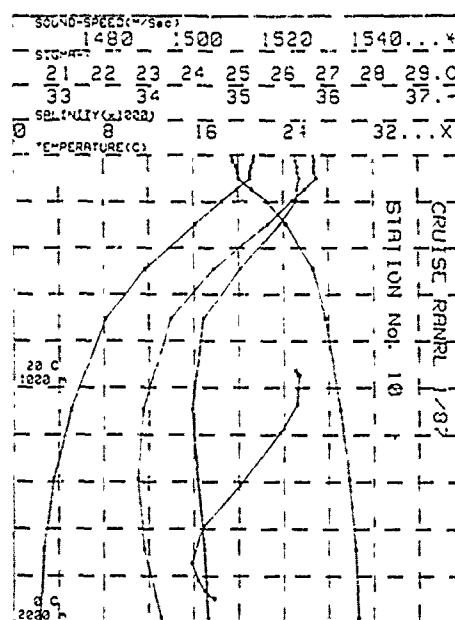
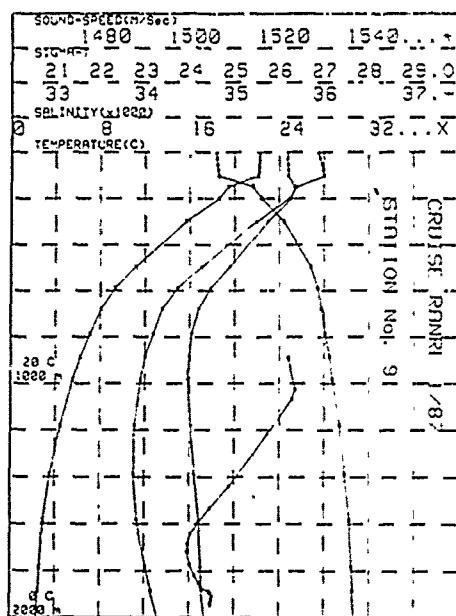






STATION 10		32.005		15N-29E		RANGL 1/87		DEPTH 2340			
DATE 30/05/87		TIME = 0725 QZT									
DEPTH	TOW	SALINITY	SIGMA-T	A.S.V.	CL, CT	OC	POT, TSWP	S.S			
m	Pos	‰	kg/m <sup>3</sup>	°C	°C	°C	dbar	g/kg			Dyn =
000	0	21.450	25.437	24.837	308.4	0.00	21.45	1528.7			
005	28	21.380	25.439	24.878	307.0	0.00	21.37	1527.0			
010	51	21.170	25.460	24.933	301.3	0.00	21.16	1528.8			
015	78	21.030	25.457	24.981	300.0	0.00	21.02	1529.5			
020	121	21.040	25.481	25.003	296.0	0.00	21.02	1527.4			
030	150	19.830	25.619	25.211	270.3	0.00	19.80	1524.9			
040	194	18.620	25.650	25.261	260.5	0.00	18.48	1522.9			
050	230	17.410	25.681	25.262	248.0	0.00	17.44	1519.5			
060	283	11.660	25.013	24.844	144.5	0.00	11.00	1504.0			
070	365	6.200	24.904	20.833	123.5	0.00	6.13	1494.8			
080	1095	5.070	24.480	20.729	92.9	0.00	4.96	1486.7			
090	1390	4.780	24.517	20.688	71.0	0.00	4.71	1488.9			
100	1646	2.740	24.421	20.748	57.0	0.00	2.62	1480.1			
110	1980	2.407	24.459	20.785	43.4	0.00	2.26	1492.7			
120	2274	2.041	24.731	21.753	52.8	0.00	1.68	1496.2			
ISL	0	21.45	33.64	24.837	308.4	5.00	21.45	1528.7	0.0000		
ISL	10	21.44	33.64	24.854	308.0	0.00	21.44	1526.9	0.0001		
ISL	23	21.29	33.64	24.878	307.0	0.00	21.28	1527.0	0.0777		
ISL	50	21.13	35.46	24.949	301.5	0.00	21.17	1528.9	0.0000		
ISL	75	21.03	35.46	24.986	296.0	0.00	21.02	1527.0	0.228		
ISL	100	21.04	33.64	25.000	296.4	0.00	21.02	1527.4	0.0000		
ISL	150	19.83	33.64	25.211	270.3	0.00	19.80	1524.9	0.043		
ISL	200	18.62	34.47	25.265	260.7	0.00	18.44	1521.9	0.373		
ISL	250	17.41	35.28	25.267	248.0	0.00	17.37	1517.1	0.5000		
ISL	300	16.13	35.45	25.086	229.8	0.00	16.10	1513.5	0.784		
ISL	400	13.67	35.27	26.414	170.9	0.00	13.61	1509.8	0.963		
ISL	500	10.53	35.28	26.874	147.8	0.00	11.48	1504.0	1.1603		
ISL	600	7.40	34.78	24.925	125.1	0.00	6.99	1498.0	1.263		
ISL	800	7.21	34.53	25.017	115.7	0.00	7.23	1482.8	1.550		
ISL	1000	5.71	34.49	25.181	100.0	0.00	5.62	1459.7	1.7331		
ISL	1200	3.96	34.53	25.110	77.5	0.00	3.86	1447.7	2.010		
ISL	1400	2.82	34.58	25.045	64.5	0.00	2.82	1432.1	2.162		
ISL	2000	0.28	34.96	26.870	51.3	0.00	2.24	1482.9	2.818		

STATION	12	21.585	180.346	DAWML	1/87			
DATE	20/05/87	TIME	1744 07	DEPTH	1450			
DEPTH	TM	SALINITY	SIGMA-T	A.S.V	CL	W/L	POT-TEMP	S.S
	HC	Pct		CT/PT				M/S
008	0	21.540	35.587	24.671	326.1	0.00	21.98	1529.1
016	0	21.870	35.586	24.673	326.8	0.00	21.95	1529.3
024	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
032	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
040	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
048	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
056	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
064	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
072	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
080	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
088	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
096	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
104	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
112	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
120	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
128	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
136	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
144	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
152	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
160	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
168	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
176	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
184	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
192	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
200	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
208	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
216	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
224	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
232	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
240	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
248	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
256	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
264	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
272	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
280	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
288	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
296	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
304	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
312	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
320	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3
328	0	21.810	35.615	24.678	326.8	0.00	21.98	1529.3



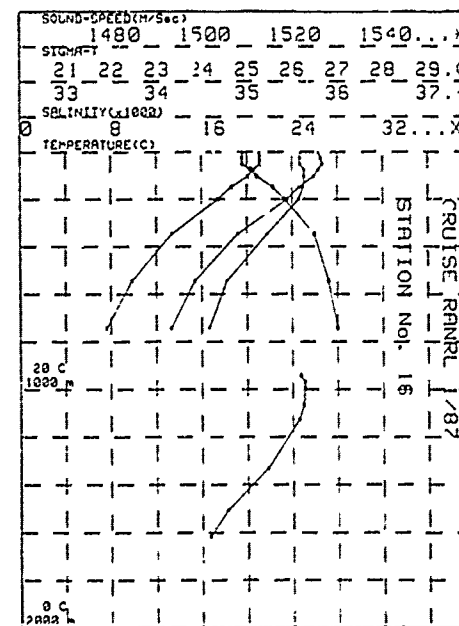
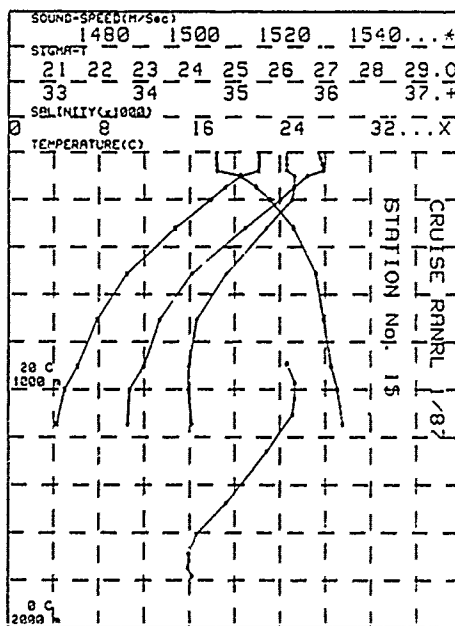
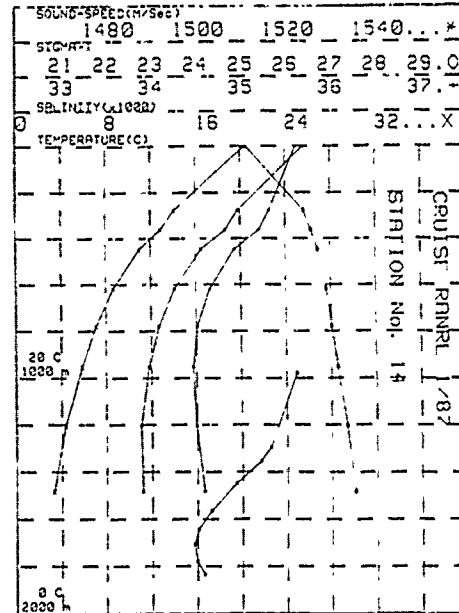
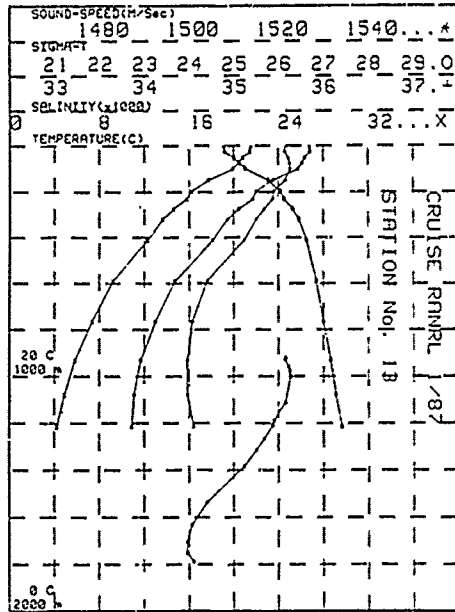


STATION 13		31.585		181.036		RAWEL 1/87		DEPTH= 1330	
DATE= 30/05/87		TIME= 2341 GMT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OT	POT.TEMP	S.S	Dyn #
m	°C	Ppt	CL/T	°C	°C	°C	°C	°C	
088	0	21.540	35.581	24.789	314.8	0.00	21.54	1326.9	
088	28	21.430	35.572	24.613	315.0	0.00	21.42	1327.0	
088	52	20.810	35.609	25.011	295.8	0.00	20.80	1325.8	
088	75	20.430	35.624	25.125	285.8	0.00	20.42	1325.3	
088	100	19.940	35.630	25.250	273.6	0.00	19.92	1324.3	
088	150	17.730	35.577	25.782	225.4	0.00	17.70	1318.9	
088	198	16.210	35.453	26.048	201.2	0.00	16.18	1315.0	
088	232	15.793	35.438	26.134	194.1	0.00	15.75	1314.2	
088	278	14.640	35.342	26.315	177.8	0.00	14.60	1311.2	
088	321	13.990	35.250	26.452	165.8	0.00	13.91	1308.8	
088	413	12.280	35.118	26.624	150.8	0.00	12.22	1305.4	
088	581	9.250	34.702	26.845	131.2	0.00	9.18	1297.0	
088	784	7.340	34.531	26.999	117.1	0.00	7.28	1292.7	
088	1078	4.925	34.482	27.273	90.7	0.00	4.83	1287.8	
088	1317	4.211	34.548	27.403	77.9	0.00	4.11	1287.3	
131	0	21.54	35.58	24.789	314.8	0.00	21.54	1326.9	0.000
131	10	21.50	35.58	24.784	314.3	0.00	21.50	1327.0	0.011
131	25	21.43	35.57	24.612	313.8	0.00	21.43	1327.0	0.079
131	50	20.83	35.61	24.998	296.8	0.00	20.84	1326.0	0.155
131	75	20.43	35.62	25.125	285.8	0.00	20.42	1325.3	0.228
131	100	19.94	35.63	25.250	273.6	0.00	19.92	1324.3	0.298
131	150	17.73	35.58	25.782	225.4	0.00	17.70	1318.9	0.422
131	200	16.20	35.45	26.052	200.9	0.00	16.18	1315.0	0.529
131	250	15.30	35.40	26.214	186.8	0.00	15.28	1311.9	0.628
131	300	14.09	35.29	26.383	170.8	0.00	14.05	1309.8	0.718
131	400	12.48	35.14	26.602	152.8	0.00	12.43	1305.8	0.877
131	500	10.84	34.88	26.740	140.6	0.00	10.80	1300.8	1.024
131	600	9.14	34.68	26.853	130.5	0.00	9.08	1296.7	1.159
131	800	7.04	34.51	27.027	114.4	0.00	6.96	1291.7	1.404
131	1000	5.43	34.48	27.201	97.7	0.00	5.35	1286.8	1.618

STATION 14		31.598		181.346		RAWEL 1/87		DEPTH= 1509	
DATE= 31/05/87		TIME= 0405 GMT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OT	POT.TEMP	S.S	Dyn #
m	°C	Ppt	CL/T	°C	°C	°C	°C	°C	
084	0	20.420	35.619	25.123	283.0	0.00	20.42	1324.0	
088	218	14.090	35.322	26.418	187.9	0.00	14.05	1300.4	
088	363	12.890	35.208	26.377	154.5	0.00	12.84	1306.7	
088	448	11.050	34.532	26.723	141.4	0.00	10.94	1301.2	
088	618	8.640	34.603	28.901	123.7	0.00	8.61	1295.3	
088	781	7.120	34.512	27.018	115.2	0.00	7.04	1291.7	
088	933	5.860	34.427	27.149	102.9	0.00	5.77	1288.3	
088	1209	4.380	34.498	27.349	83.4	0.00	4.28	1287.7	
088	1471	3.291	34.543	27.523	66.0	0.00	3.18	1286.0	
131	0	20.42	35.61	25.123	283.0	0.00	20.42	1324.0	0.000
131	200	13.85	35.31	26.480	184.4	0.00	13.80	1309.0	0.463
131	400	12.01	35.01	26.843	148.3	0.00	11.95	1304.1	0.820
131	500	10.22	34.81	26.784	136.1	0.00	10.16	1299.2	0.942
131	800	8.99	34.61	26.880	127.1	0.00	8.84	1295.8	1.094
131	1000	8.97	34.50	27.032	113.8	0.00	8.88	1291.5	1.235
131	1300	5.54	34.47	27.198	98.0	0.00	5.45	1288.0	1.546
131	1500	3.83	34.52	27.414	77.0	0.00	3.82	1287.8	1.812

STATION 15		32.005		182.006		RAWEL 1/87		DEPTH= 1174	
DATE= 31/05/87		TIME= 0759 GMT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OT	POT.TEMP	S.S	Dyn #
m	°C	Ppt	CL/T	°C	°C	°C	°C	°C	
088	0	22.150	35.578	24.618	331.3	0.00	22.15	1328.5	
088	26	22.180	35.575	24.606	333.3	0.00	22.17	1329.0	
088	52	22.180	35.573	24.614	333.5	0.00	22.15	1329.4	
088	77	22.130	35.578	24.622	333.7	0.00	22.11	1329.7	
088	162	20.540	35.642	25.124	294.7	0.00	20.52	1326.0	
088	148	19.190	35.658	25.477	254.8	0.00	19.18	1323.1	
088	202	17.860	35.654	25.783	226.0	0.00	17.83	1320.2	
088	321	14.780	35.555	26.299	180.8	0.00	14.71	1313.3	
088	514	10.490	34.909	26.796	135.3	0.00	10.43	1300.5	
088	708	7.840	34.578	26.968	120.2	0.00	7.77	1293.4	
088	903	6.150	34.490	27.131	104.6	0.00	6.07	1289.9	
088	1001	4.994	34.482	27.285	90.7	0.00	4.91	1286.8	
088	1147	4.290	34.523	27.378	80.0	0.00	4.20	1286.4	
131	0	22.15	35.58	24.618	331.3	0.00	22.15	1328.5	0.000
131	10	22.17	35.58	24.610	332.3	0.00	22.17	1328.7	0.033
131	25	22.15	35.58	24.606	333.3	0.00	22.17	1329.0	0.063
131	50	22.16	35.58	24.613	333.5	0.00	22.15	1329.3	0.196
131	75	22.13	35.58	24.621	333.6	0.00	22.12	1329.7	0.250
131	100	20.64	35.66	25.082	298.7	0.00	20.63	1326.3	0.328
131	150	18.17	35.68	25.483	254.0	0.00	18.14	1321.1	0.484
131	200	17.91	35.63	25.782	227.0	0.00	17.86	1320.3	0.544
131	250	16.57	35.52	26.016	206.1	0.00	16.53	1317.0	0.683
131	300	15.28	35.40	26.231	187.7	0.00	15.23	1313.7	0.792
131	400	12.81	35.16	26.542	158.5	0.00	12.76	1306.9	0.946
131	500	10.74	34.84	26.771	137.8	0.00	10.68	1301.2	1.118
131	600	9.20	34.73	26.871	126.8	0.00	9.14	1296.9	1.249
131	800	7.15	34.52	27.026	114.8	0.00	7.07	1292.2	1.481
131	1000	5.00	34.48	27.264	90.9	0.00	4.92	1286.9	1.686

STATION 16		31.585		182.306		RAWEL 1/87		DEPTH= 1240	
DATE= 31/05/87		TIME= 1208 GMT							
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OT	POT.TEMP	S.S	Dyn #
m	°C	Ppt	CL/T	°C	°C	°C	°C	°C	
088	0	21.120	35.595	24.918	302.8	0.00	21.12	1325.8	
088	26	21.180	35.588	24.869	305.3	0.00	21.15	1326.4	
088	52	21.130	35.590	24.908	305.3	0.00	21.12	1326.7	
088	78	20.830	35.637	25.041	298.8	0.00	20.82	1325.8	
088	104	20.090	35.638	25.228	277.0	0.00	20.07	1324.8	
088	150	18.640	35.625	25.587	244.1	0.00	18.63	1321.6	
088	201	17.480	35.574	25.845	221.0	0.00	17.43	1318.9	
088	348	13.580	35.226	26.494	182.0	0.00	13.51	1308.1	
088	545	9.850	34.781	26.807	134.5	0.00	9.79	1298.5	
088	743	7.850	34.587	27.001	117.0	0.00	7.77	1293.3	
131	0	21.12	35.58	24.918	302.8	0.00	21.12	1325.8	0.000
131	10	21.14	35.58	24.868	304.1	0.00	21.14	1326.1	0.030
131	25	21.16	35.59	24.896	305.3	0.00	21.15	1326.3	0.079
131	50	21.13	35.59	24.902	305.3	0.00	21.14	1326.7	0.132
131	75	20.85	35.64	25.074	290.4	0.00	20.84	1325.9	0.227
131	100	20.18	35.64	25.202	279.2	0.00	20.18	1325.0	0.298
131	150	18.64	35.63	25.587	244.1	0.00	18.63	1321.6	0.429
131	200	17.48	35.58	25.840	221.4	0.00	17.45	1318.0	0.549
131	250	15.95	35.46	26.102	197.7	0.00	15.91	1314.8	0.681
131	300	14.58	35.34	26.322	177.7	0.00	14.51	1311.3	0.747
131	400	12.31	35.08	26.586	153.8	0.00	12.25	1304.1	0.912
131	500	10.54	34.86	26.748	136.8	0.00	10.47	1300.3	1.099
131	800	9.11	34.79	26.873	128.6	0.00	9.04	1296.8	1.194

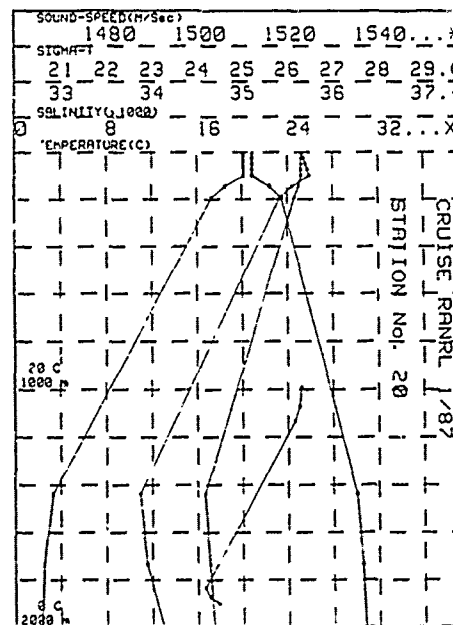
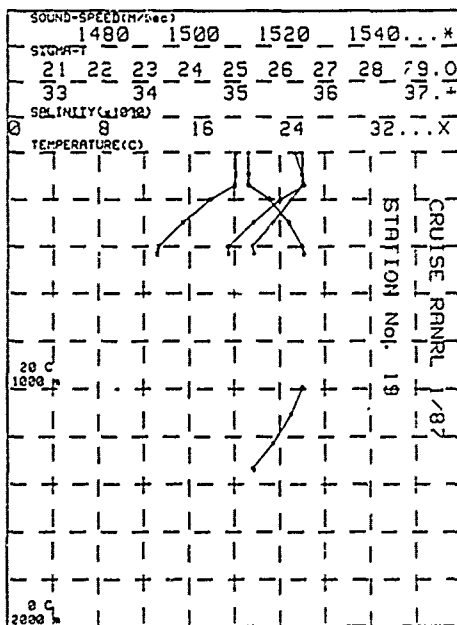
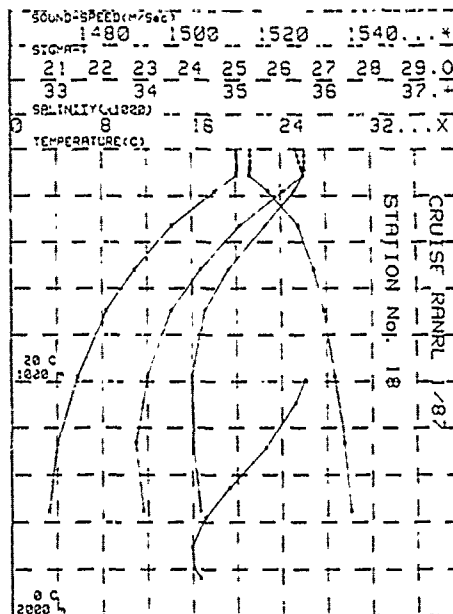
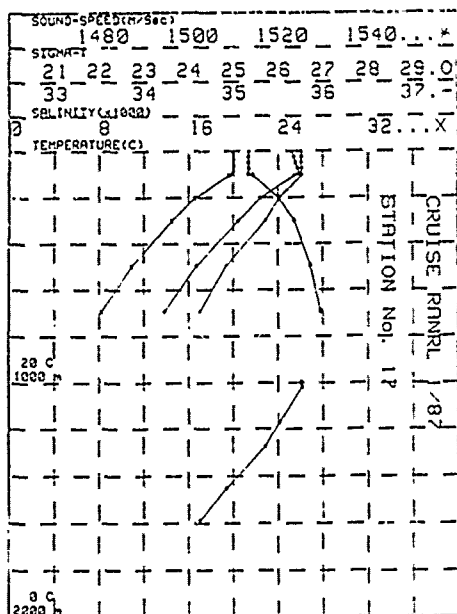


STATION 17 DATE= 31/05/87									
32.018 163.000 TIME= 1623 GHT									
RANGE 1/87 DEPTH 1120									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S	DYN	
m	°C	Ppt	CL/T	ML/L	°C	°C	M/S		
085	0	18.290	35.759	25.545	262.0	0.00	18.99	1523.0	
085	25	20.010	35.758	25.537	263.6	0.00	20.01	1523.5	
085	50	20.010	35.754	25.536	264.6	0.00	20.00	1523.9	
085	75	20.010	35.759	25.536	265.2	0.00	20.00	1524.3	
085	100	20.010	35.761	25.541	265.9	0.00	19.99	1524.7	
085	125	19.630	35.764	25.543	256.2	0.00	18.81	1523.8	
085	204	18.520	35.514	26.021	204.1	0.00	18.50	1518.1	
085	301	16.460	35.256	26.261	176.1	0.00	14.43	1511.1	
085	496	10.820	34.921	26.729	141.9	0.00	10.86	1501.8	
085	664	8.295	34.626	26.848	121.9	0.00	8.13	1494.6	
151	0	18.98	35.78	25.545	262.0	0.00	18.98	1523.0	0.000
151	10	20.00	35.78	25.541	262.7	0.00	20.00	1523.2	0.028
151	25	20.01	35.78	25.537	263.6	0.00	20.01	1523.5	0.085
151	50	20.01	35.75	25.536	264.6	0.00	20.00	1523.9	0.132
151	75	20.01	35.78	25.536	265.2	0.00	20.00	1524.3	0.198
151	100	20.01	35.78	25.541	265.9	0.00	19.99	1524.7	0.264
151	150	18.11	35.64	25.722	230.2	0.00	18.08	1520.0	0.388
151	200	16.61	35.52	26.002	205.8	0.00	16.60	1516.4	0.487
151	250	15.33	35.44	26.189	186.7	0.00	15.34	1513.7	0.596
151	300	14.50	35.38	26.258	174.4	0.00	14.48	1511.2	0.687
151	400	12.59	35.12	26.564	158.4	0.00	12.53	1506.1	0.853
151	500	10.86	34.82	26.732	141.8	0.00	10.83	1501.7	1.003
151	600	9.40	34.73	26.862	130.0	0.00	9.33	1497.8	1.140

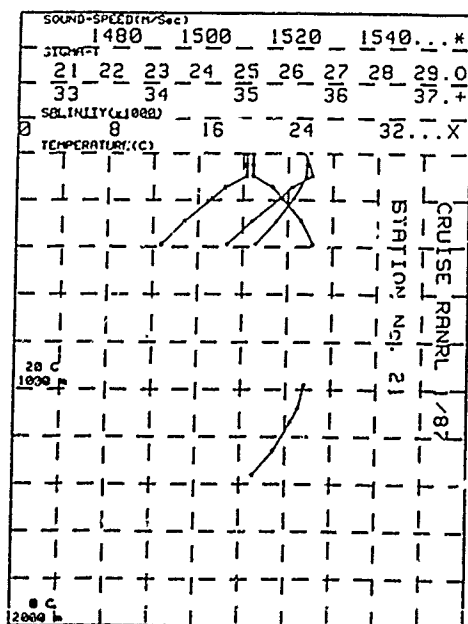
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32.005 163.296 TIME= 2149 GHT									
RANGE 1/87 DEPTH 1800									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S	DYN	
m	°C	Ppt	CL/T	ML/L	°C	°C	M/S		
085	0	20.47	35.746	25.529	263.5	0.00	20.07	1523.2	
085	25	20.090	35.746	25.524	265.0	0.00	20.06	1523.7	
085	50	20.070	35.746	25.529	265.4	0.00	20.06	1524.1	
085	75	20.100	35.763	25.519	271.3	0.00	20.01	1524.6	
085	93	20.110	35.771	25.522	267.4	0.00	20.06	1524.8	
085	113	20.100	35.760	25.516	264.7	0.00	20.06	1525.2	
085	182	18.150	35.652	25.735	231.0	0.00	18.12	1520.7	
085	300	14.250	35.324	26.265	172.5	0.00	14.20	1510.6	
085	520	10.960	34.912	26.727	142.5	0.00	10.82	1502.0	
085	697	8.370	34.645	26.826	123.1	0.00	8.30	1495.3	
085	940	5.850	34.494	27.172	101.1	0.00	5.76	1490.0	
085	1263	4.696	34.513	27.392	78.1	0.00	3.87	1487.3	
085	1553	3.254	34.658	27.529	60.5	0.00	3.14	1486.1	
151	0	20.07	35.77	25.529	263.5	0.00	20.07	1523.2	0.000
151	10	20.08	35.77	25.528	264.1	0.00	20.08	1523.4	0.026
151	25	20.09	35.77	25.524	264.8	0.00	20.08	1523.7	0.066
151	50	20.07	35.77	25.526	265.2	0.00	20.06	1524.0	0.132
151	75	20.10	35.78	25.519	267.1	0.00	20.06	1524.5	0.198
151	100	20.11	35.77	25.520	268.7	0.00	20.09	1524.9	0.264
151	150	18.04	35.71	25.520	247.6	0.00	18.02	1522.6	0.390
151	200	17.42	35.61	25.632	222.2	0.00	17.58	1519.4	0.514
151	250	16.22	35.50	26.076	200.3	0.00	16.18	1515.6	0.621
151	300	14.95	35.29	26.281	181.8	0.00	14.90	1512.8	0.708
151	400	12.63	35.18	26.525	160.3	0.00	12.68	1507.4	0.888
151	500	11.21	34.99	26.697	145.2	0.00	11.15	1502.9	1.042
151	600	9.86	34.77	26.829	130.2	0.00	9.59	1496.7	1.181
151	800	7.37	34.57	27.026	113.1	0.00	7.29	1483.1	1.429
151	1000	5.99	34.50	27.188	95.3	0.00	5.80	1486.7	1.643
151	1300	3.92	34.52	27.417	78.7	0.00	3.82	1487.7	1.907
151	1500	3.33	34.62	27.555	63.6	0.00	3.22	1486.8	2.046

STATION 19 DATE= 01/06/87									
31.595 164.206 TIME= 0343 GHT									
RANGE 1/87 DEPTH 2830									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S	DYN	
m	°C	Ppt	CL/T	ML/L	°C	°C	M/S		
085	0	20.110	35.746	25.505	265.9	0.00	20.11	1523.3	
085	54	20.110	35.749	25.505	266.1	0.00	20.09	1523.9	
085	140	20.070	35.749	25.517	266.7	0.00	20.04	1523.5	
085	200	17.850	35.627	25.781	227.2	0.00	17.86	1520.2	
085	300	15.430	35.426	26.056	186.2	0.00	15.36	1514.2	
085	400	13.290	35.184	26.485	164.4	0.00	13.23	1508.6	
085	432	13.140	35.213	26.530	160.3	0.00	13.08	1506.7	
151	0	20.11	35.75	25.503	266.8	0.00	20.11	1523.3	0.000
151	10	20.11	35.75	25.503	266.4	0.00	20.11	1523.5	0.027
151	25	20.11	35.75	25.504	267.0	0.00	20.11	1523.7	0.067
151	50	20.11	35.75	25.504	267.9	0.00	20.10	1524.2	0.133
151	75	20.11	35.75	25.508	268.7	0.00	20.10	1524.6	0.200
151	100	20.10	35.75	25.507	269.2	0.00	20.08	1525.2	0.264
151	150	18.67	35.73	25.604	261.6	0.00	18.64	1524.3	0.402
151	200	17.89	35.63	25.781	227.2	0.00	17.86	1520.2	0.524
151	250	16.62	35.53	26.011	206.5	0.00	16.54	1517.1	0.633
151	300	15.43	35.43	26.296	186.2	0.00	15.30	1514.2	0.723
151	400	13.29	35.18	26.485	164.4	0.00	13.23	1508.6	0.908

STATION 20 DATE= 01/06/87									
32.005 164.336 TIME= 1203 GHT									
RANGE 1/87 DEPTH 2407									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OX	POT.TEMP	S.S	DYN	
m	°C	Ppt	CL/T	ML/L	°C	°C	M/S		
085	0	20.110	35.655	25.511	275.8	0.00	20.12	1523.2	
085	25	20.130	35.655	25.528	273.8	0.00	20.12	1523.7	
085	50	20.130	35.658	25.529	274.8	0.00	20.12	1524.1	
085	74	20.140	35.653	25.524	278.1	0.00	20.13	1524.5	
085	100	20.130	35.654	25.528	276.7	0.00	20.11	1524.9	
085	149	18.520	35.631	25.627	240.1	0.00	18.49	1521.1	
085	194	17.330	35.579	25.681	217.4	0.00	17.30	1518.4	
085	1438	3.320	34.564	27.323	64.0	0.00	3.21	1487.3	
085	1735	2.460	34.639	27.642	53.6	0.00	2.37	1486.5	
085	2327	1.960	34.723	27.759	43.3	0.00	1.82	1486.8	
151	0	20.12	35.66	25.531	275.8	0.00	20.12	1523.2	0.000
151	10	20.13	35.66	25.529	275.3	0.00	20.12	1523.4	0.017
151	25	20.13	35.66	25.528	275.8	0.00	20.12	1523.7	0.046
151	50	20.13	35.66	25.529	274.8	0.00	20.12	1524.1	0.137
151	75	20.16	35.65	25.524	278.4	0.00	20.13	1524.5	0.206
151	100	20.13	35.65	25.528	276.7	0.00	20.11	1524.9	0.275
151	150	18.42	35.63	25.644	236.3	0.00	18.40	1520.9	0.403
151	200	17.26	35.57	25.686	216.7	0.00	17.22	1518.2	0.517
151	250	16.37	35.49	25.990	207.5	0.00	16.33	1515.8	0.624
151	300	15.50	35.42	26.096	186.6	0.00	15.46	1513.5	0.718
151	400	13.66	35.28	26.277	161.5	0.00	13.61	1509.2	0.858
151	500	12.33	35.15	26.453	145.4	0.00	12.28	1505.2	1.113
151	600	10.91	35.04	26.618	130.5	0.00	10.85	1501.7	1.267
151	800	8.99	34.95	26.810	123.6	0.00	8.32	1499.7	1.599
151	1000	6.32	34.71	27.159	101.0	0.00	6.24	1491.4	1.842
151	1300	4.64	34.60	27.432	74.8	0.00	3.94	1487.8	2.165
151	1500	3.11	34.60	27.551	63.0	0.00	3.00	1487.5	2.306
151	2000	2.08	34.58	27.714	44.7	0.00	1.84	1491.6	2.542



STATION 21		38.000	185.016	RAHRL 1/87	DEPTH 3205			
DATE= 01/08/87		TIME= 1335 GMT						
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	OT	POT. TEMP	S.S	
m	°C	Ppt		CL/T	M/L	°C	N/Sac	Dym. 10
085 0	20.310	35.701	25.219	274.3	0.00	20.31	1523.8	
085 50	20.300	35.704	25.214	276.2	0.00	20.32	1524.7	
085 97	20.300	35.701	25.218	277.5	0.00	20.28	1525.4	
085 148	18.420	35.639	25.650	237.1	0.00	18.39	1520.8	
085 184	17.290	35.580	25.663	217.1	0.00	17.23	1518.2	
085 282	14.810	35.372	26.301	179.8	0.00	14.77	1512.0	
085 390	12.780	35.143	26.552	157.4	0.00	12.71	1504.6	
15L 0	20.31	35.70	25.219	274.3	0.00	20.31	1523.8	0.000
15L 10	20.32	35.70	25.219	274.7	0.00	20.31	1524.0	.027
15L 25	20.33	35.70	25.219	275.3	0.00	20.32	1524.3	.066
15L 50	20.33	35.71	25.214	276.2	0.00	20.32	1524.7	.138
15L 75	20.31	35.70	25.218	276.8	0.00	20.30	1525.0	.207
15L 100	20.18	35.70	25.231	274.5	0.00	20.15	1525.0	.278
15L 150	18.32	35.63	25.677	235.4	0.00	18.30	1520.6	.403
15L 200	17.10	35.55	25.813	214.4	0.00	17.08	1517.8	.518
15L 250	15.81	35.46	26.143	193.8	0.00	15.77	1514.8	.618
15L 300	14.63	35.35	26.378	177.2	0.00	14.58	1511.6	.712



**Cruise MSD 2/87***Notes for cruise MSD 2/87*

As for cruise RANRL 1/87, the Nansen bottles were strung on the CTD wire, with similar results ie many bottles pre-tripped. A T-S polynomial was constructed from the good data sets for the range 2.5 to 19.5°C of the form:

$$S = a + bT + cT^2 + dT^3 + eT^4 + fT^5 + gT^6$$

where

$$a = 34.81344$$

$$b = -0.2574205 * 0.001$$

$$c = -0.5025278 * 0.01$$

$$d = 0.109749 * 0.01$$

$$e = -0.857145 * 0.001$$

$$f = 0.302372 * 10^{-4}$$

$$g = -0.413648 * 10^{-6}$$

Standard error of estimate of 0.019 PSU.

*Additional Nansen data for cruise MSD 2/87*

For this cruise the incomplete data sets filled in by using T-S polynomial and CTD data ARE included in the tables, and are marked with closed circles to show their origin. These values are included to obtain more useful plots and derived data.

*Other sources of data for cruise MSD 2/87*

Lawrence, M.W. (1987)

"Maritime Systems Division MSD Cruise Report 2/87. Study of acoustic bottom interaction using ADOBE equipment, and, study of Tasman Front and East Australian Current".  
(Unpublished document). A narrative of the actual cruise

Mulhearn, P.J., Hamilton, L.J., and Scott, B.D. (1989)

"Deep structure of the East Australian Current and Tasman Front".  
WSRL Tech. Memo. 7/89

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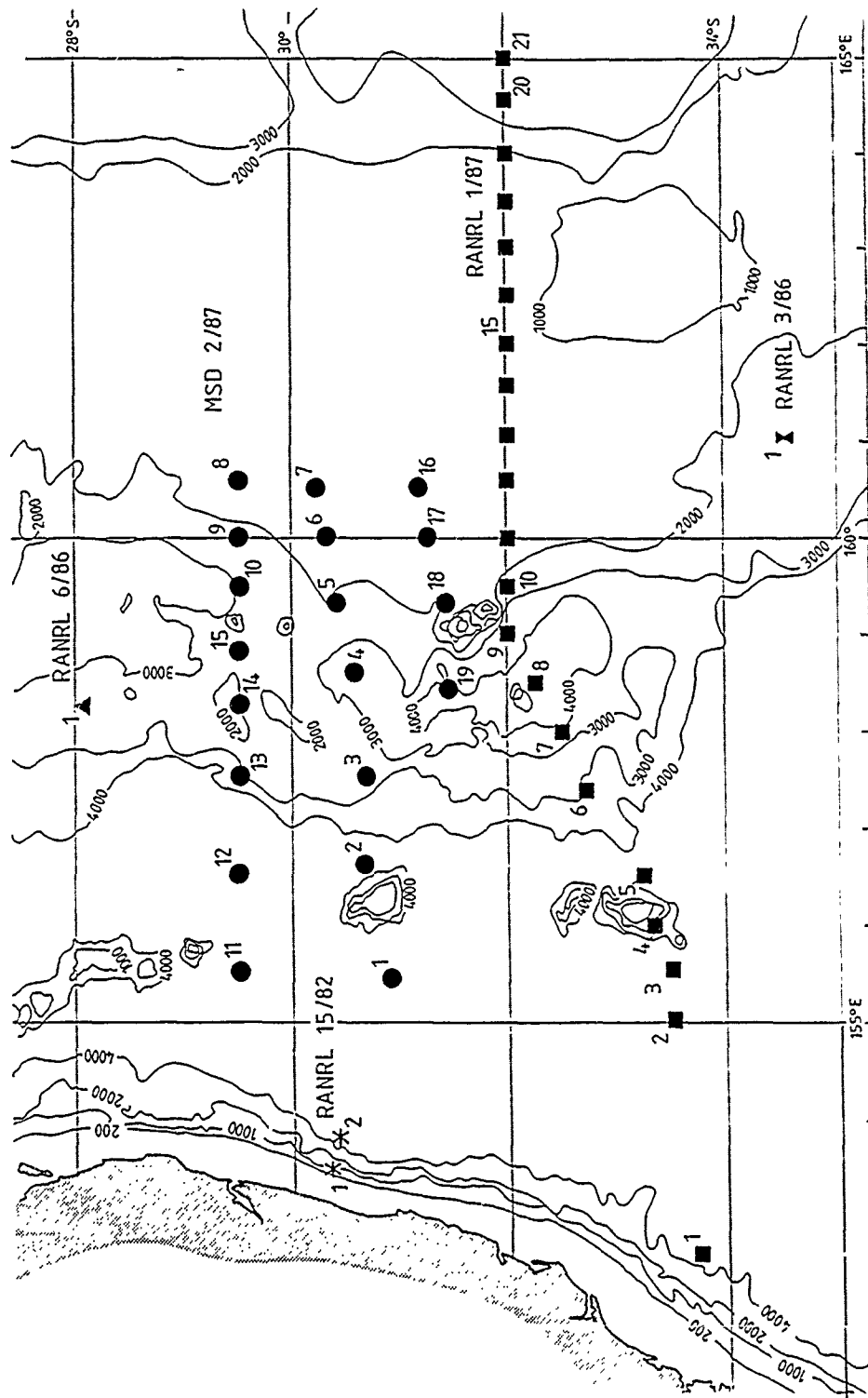


Figure 26. Nansen station positions for survey MSD 2/87

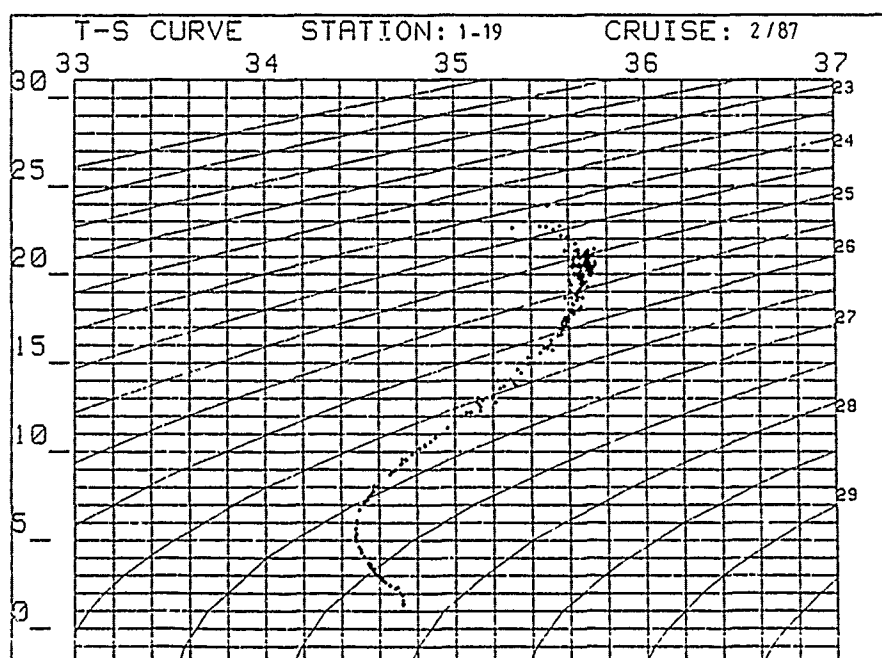
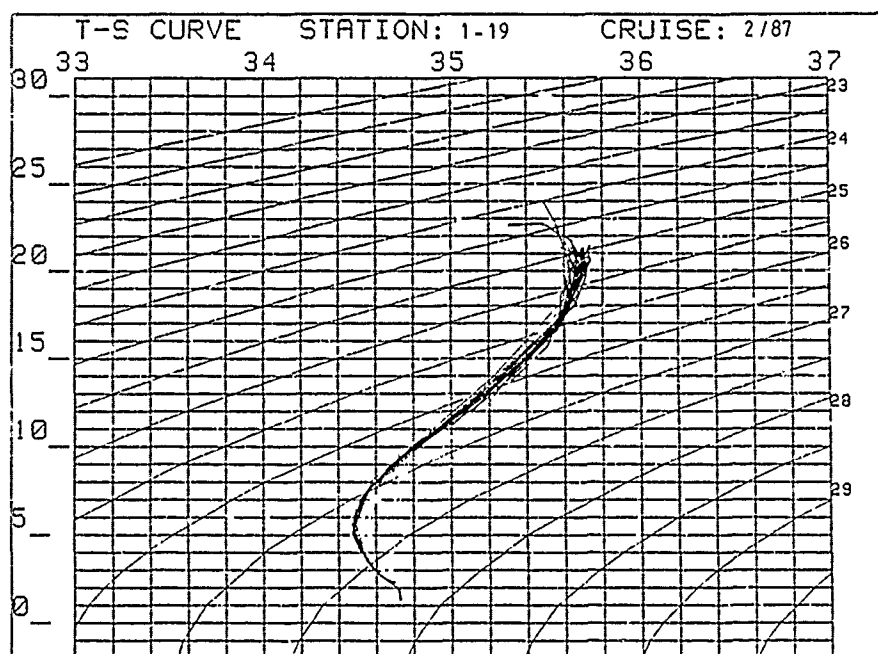
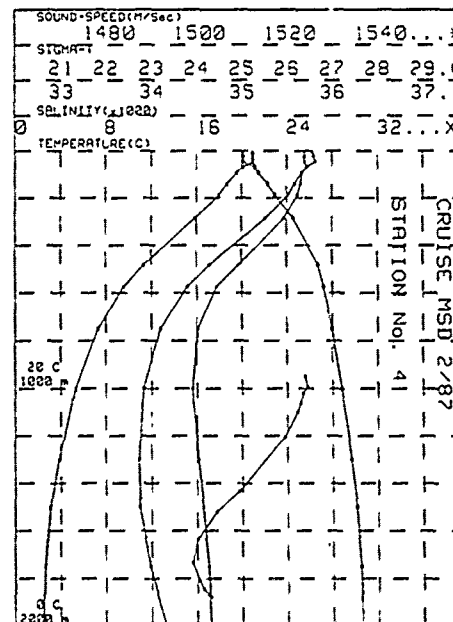
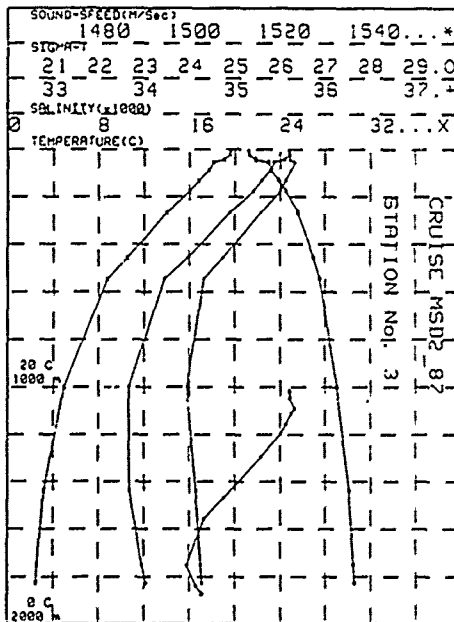
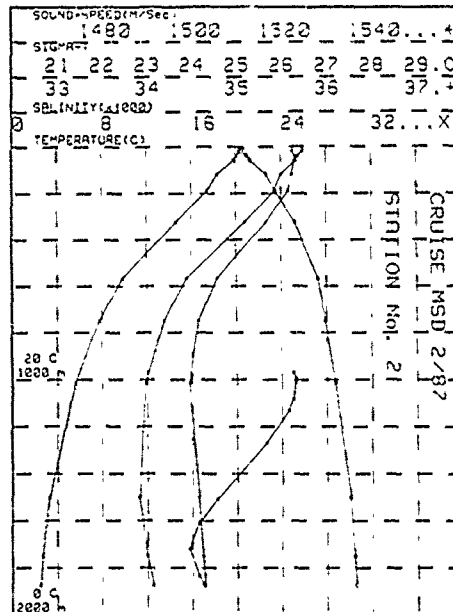
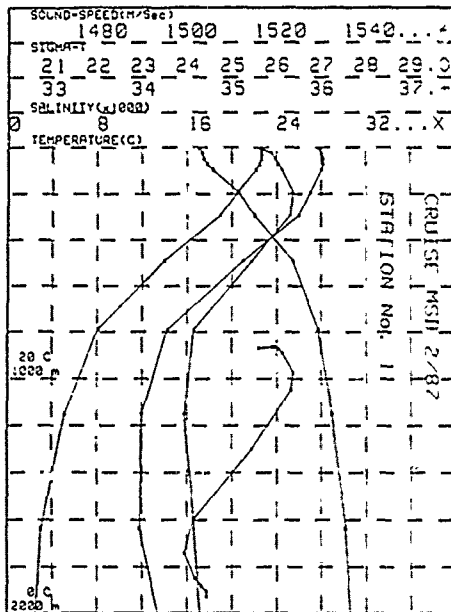


Figure 27. Temperature-salinity curves and scatter plot for cruise MSD 2/87

STATION	20	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	315	330	345	360	375	390	405	420	435	450	465	480	495	510	525	540	555	570	585	600	615	630	645	660	675	690	705	720	735	750	765	780	795	810	825	840	855	870	885	900	915	930	945	960	975	990	1005	1020	1035	1050	1065	1080	1095	1110	1125	1140	1155	1170	1185	1200	1215	1230	1245	1260	1275	1290	1305	1320	1335	1350	1365	1380	1395	1410	1425	1440	1455	1470	1485	1500	1515	1530	1545	1560	1575	1590	1605	1620	1635	1650	1665	1680	1695	1710	1725	1740	1755	1770	1785	1800	1815	1830	1845	1860	1875	1890	1905	1920	1935	1950	1965	1980	1995	2010	2025	2040	2055	2070	2085	2100	2115	2130	2145	2160	2175	2190	2205	2220	2235	2250	2265	2280	2295	2310	2325	2340	2355	2370	2385	2400	2415	2430	2445	2460	2475	2490	2505	2520	2535	2550	2565	2580	2595	2610	2625	2640	2655	2670	2685	2700	2715	2730	2745	2760	2775	2790	2805	2820	2835	2850	2865	2880	2895	2910	2925	2940	2955	2970	2985	3000	3015	3030	3045	3060	3075	3090	3105	3120	3135	3150	3165	3180	3195	3210	3225	3240	3255	3270	3285	3300	3315	3330	3345	3360	3375	3390	3405	3420	3435	3450	3465	3480	3495	3510	3525	3540	3555	3570	3585	3600	3615	3630	3645	3660	3675	3690	3705	3720	3735	3750	3765	3780	3795	3810	3825	3840	3855	3870	3885	3900	3915	3930	3945	3960	3975	3990	4005	4020	4035	4050	4065	4080	4095	4110	4125	4140	4155	4170	4185	4200	4215	4230	4245	4260	4275	4290	4305	4320	4335	4350	4365	4380	4395	4410	4425	4440	4455	4470	4485	4500	4515	4530	4545	4560	4575	4590	4605	4620	4635	4650	4665	4680	4695	4710	4725	4740	4755	4770	4785	4800	4815	4830	4845	4860	4875	4890	4905	4920	4935	4950	4965	4980	4995	5010	5025	5040	5055	5070	5085	5100	5115	5130	5145	5160	5175	5190	5205	5220	5235	5250	5265	5280	5295	5310	5325	5340	5355	5370	5385	5400	5415	5430	5445	5460	5475	5490	5505	5520	5535	5550	5565	5580	5595	5610	5625	5640	5655	5670	5685	5700	5715	5730	5745	5760	5775	5790	5805	5820	5835	5850	5865	5880	5895	5910	5925	5940	5955	5970	5985	6000	6015	6030	6045	6060	6075	6090	6105	6120	6135	6150	6165	6180	6195	6210	6225	6240	6255	6270	6285	6300	6315	6330	6345	6360	6375	6390	6405	6420	6435	6450	6465	6480	6495	6510	6525	6540	6555	6570	6585	6600	6615	6630	6645	6660	6675	6690	6705	6720	6735	6750	6765	6780	6795	6810	6825	6840	6855	6870	6885	6900	6915	6930	6945	6960	6975	6990	7005	7020	7035	7050	7065	7080	7095	7110	7125	7140	7155	7170	7185	7200	7215	7230	7245	7260	7275	7290	7305	7320	7335	7350	7365	7380	7395	7410	7425	7440	7455	7470	7485	7500	7515	7530	7545	7560	7575	7590	7605	7620	7635	7650	7665	7680	7695	7710	7725	7740	7755	7770	7785	7800	7815	7830	7845	7860	7875	7890	7905	7920	7935	7950	7965	7980	7995	8010	8025	8040	8055	8070	8085	8100	8115	8130	8145	8160	8175	8190	8205	8220	8235	8250	8265	8280	8295	8310	8325	8340	8355	8370	8385	8400	8415	8430	8445	8460	8475	8490	8505	8520	8535	8550	8565	8580	8595	8610	8625	8640	8655	8670	8685	8700	8715	8730	8745	8760	8775	8790	8805	8820	8835	8850	8865	8880	8895	8910	8925	8940	8955	8970	8985	9000	9015	9030	9045	9060	9075	9090	9105	9120	9135	9150	9165	9180	9195	9210	9225	9240	9255	9270	9285	9300	9315	9330	9345	9360	9375	9390	9405	9420	9435	9450	9465	9480	9495	9510	9525	9540	9555	9570	9585	9600	9615	9630	9645	9660	9675	9690	9705	9720	9735	9750	9765	9780	9795	9810	9825	9840	9855	9870	9885	9900	9915	9930	9945	9960	9975	9990	10005	10020	10035	10050	10065	10080	10095	10110	10125	10140	10155	10170	10185	10200	10215	10230	10245	10260	10275	10290	10305	10320	10335	10350	10365	10380	10395	10410	10425	10440	10455	10470	10485	10500	10515	10530	10545	10560	10575	10590	10605	10620	10635	10650	10665	10680	10695	10710	10725	10740	10755	10770	10785	10800	10815	10830	10845	10860	10875	10890	10905	10920	10935	10950	10965	10980	10995	11010	11025	11040	11055	11070	11085	11100	11115	11130	11145	11160	11175	11190	11205	11220	11235	11250	11265	11280	11295	11310	11325	11340	11355	11370	11385	11400	11415	11430	11445	11460	11475	11490	11505	11520	11535	11550	11565	11580	11595	11610	11625	11640	11655	11670	11685	11700	11715	11730	11745	11760	11775	11790	11805	11820	11835	11850	11865	11880	11895	11910	11925	11940	11955	11970	11985	12000	12015	12030	12045	12060	12075	12090	12105	12120	12135	12150	12165	12180	12195	12210	12225	12240	12255	12270	12285	12300	12315	12330	12345	12360	12375	12390	12405	12420	12435	12450	12465	12480	12495	12510	12525	12540	12555	12570	12585	12600	12615	12630	12645	12660	12675	12690	12705	12720	12735	12750	12765	12780	12795	12810	12825	12840	12855	12870	12885	12900	12915	12930	12945	12960	12975	12990	13005	13020	13035	13050	13065	13080	13095	13110	13125	13140	13155	13170	13185	13200	13215	13230	13245	13260	13275	13290	13305	13320	13335	13350	13365	13380	13395	13410	13425	13440	13455	13470	13485	13500	13515	13530	13545	13560	13575	13590	13605	13620	13635	13650	13665	13680	13695	13710	13725	13740	13755	13770	13785	13800	13815	13830	13845	13860	13875	13890	13905	13920	13935	13950	13965	13980	13995	14010	14025	14040	14055	14070	14085	14100	14115	14130	14145	14160	14175	14190	14205	14220	14235	14250	14265	14280	14295	14310	14325	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[illegible]

- VALUES FOR MSD 2/87 FROM A CTD,  
OR COMPOSITE T-S PROFILE POLYNOMIAL.

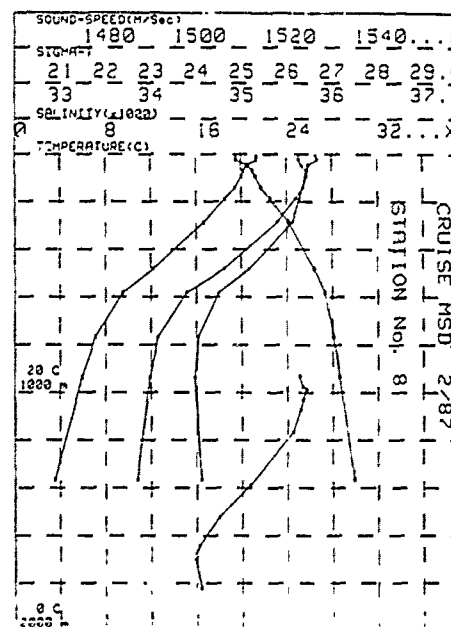
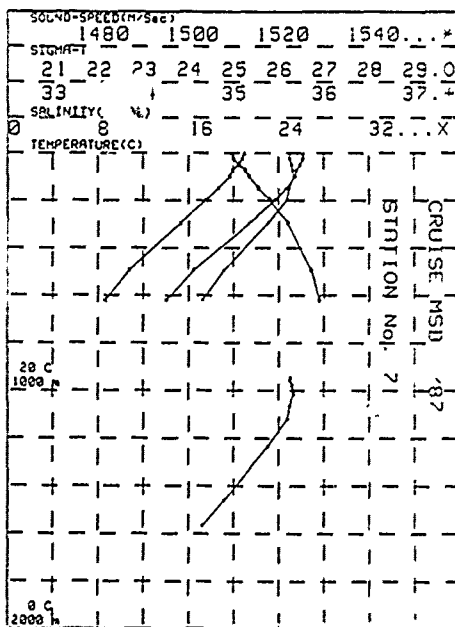
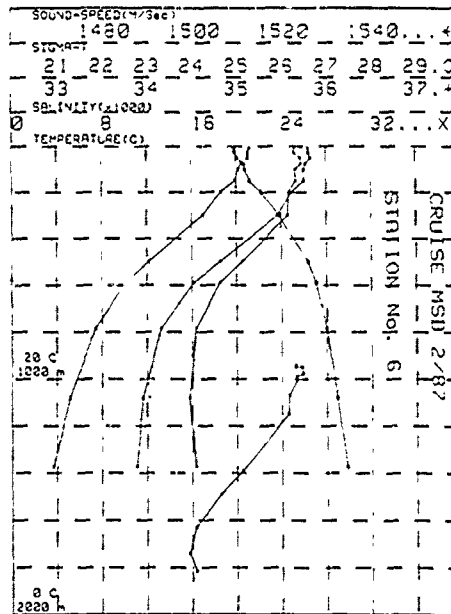
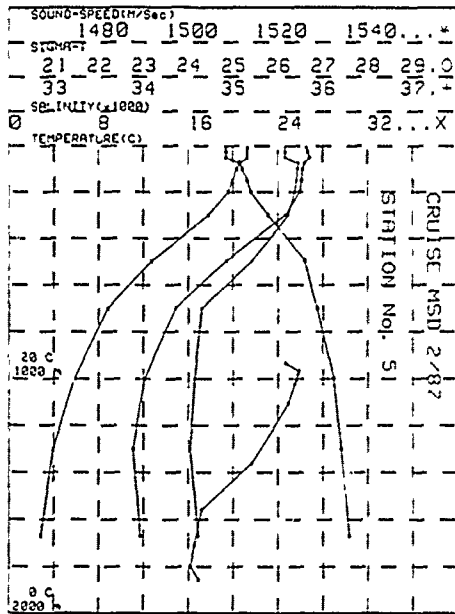


STATION 5 DATE= 13/11/87									
30.263 199.186 HSD 2/87 TIME= 1719 GHT DEPTH= 2587									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT.TDWP	S.S	Dym #	
m	°C	PSU	kg/m <sup>3</sup>	°C	ML/L	°C	M/Sec		
0BS 0	21.540	35.582	24.845	309.3	0.00	21.34	1526.4		
0BS 25	21.330	35.583	24.848	310.1	0.00	21.33	1526.8		
0BS 50	21.330	35.583	24.848	311.0	0.00	21.32	1527.2		
0BS 75	20.680	35.736	25.148	283.4	0.00	20.65	1526.0		
0BS 100	20.170	35.727	25.219	277.5	0.00	20.15	1525.8		
0BS 150	19.630	35.710	25.323	269.4	0.00	19.60	1525.2		
0BS 199	19.553	35.690	25.408	263.0	0.00	19.51	1525.0		
0BS 299	17.830	35.615	25.786	229.9	0.00	17.78	1521.8		
0BS 496	12.780	35.214	26.467	154.9	0.00	12.68	1506.5		
0BS 700	8.620	34.850	26.873	120.0	0.00	8.74	1487.1		
0BS 1000	5.610	34.570	27.237	95.2	0.00	5.72	1480.3		
0BS 1300	3.970	34.520	27.408	77.7	0.00	3.87	1487.8		
0BS 1670	2.870	34.614	27.588	58.7	0.00	2.75	1486.3		
ISL 0	21.34	35.58	24.845	309.3	0.00	21.34	1526.4	0.000	
ISL 10	21.33	35.58	24.847	309.7	0.00	21.33	1526.5	.031	
ISL 25	21.33	35.58	24.848	310.1	0.00	21.33	1526.8	.077	
ISL 50	21.33	35.58	24.848	311.0	0.00	21.32	1527.2	.155	
ISL 75	20.68	35.74	25.148	283.4	0.00	20.65	1526.0	.229	
ISL 100	20.17	35.73	25.219	277.5	0.00	20.15	1525.8	.300	
ISL 150	19.63	35.71	25.323	269.4	0.00	19.60	1525.2	.436	
ISL 200	19.54	35.69	25.411	262.7	0.00	19.50	1525.0	.588	
ISL 250	18.74	35.64	25.598	244.5	0.00	18.70	1523.6	.888	
ISL 300	17.80	35.61	25.782	229.4	0.00	17.75	1521.8	.815	
ISL 400	15.08	35.43	26.277	185.2	0.00	15.01	1515.8	1.029	
ISL 500	12.67	35.20	26.613	154.4	0.00	12.60	1506.2	1.198	
ISL 600	10.16	34.87	26.743	142.1	0.00	10.18	1502.0	1.347	
ISL 800	7.89	34.62	27.018	116.5	0.00	7.60	1494.2	1.607	
ISL 1000	5.81	34.57	27.237	95.2	0.00	5.72	1490.3	1.823	
ISL 1300	3.87	34.52	27.408	77.7	0.00	3.87	1487.8	2.080	
ISL 1500	3.22	34.55	27.510	67.5	0.00	3.10	1487.9	2.226	

STATION 6 DATE= 13/11/87									
30.195 199.016 HSD 2/87 TIME= 2320 GHT DEPTH= 1726									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT.TDWP	S.S	Dym #	
m	°C	PSU	kg/m <sup>3</sup>	°C	ML/L	°C	M/Sec		
0BS 0	21.210	35.655	24.837	300.8	0.00	21.21	1526.1		
0BS 25	21.080	35.650	24.968	296.7	0.00	21.08	1526.2		
0BS 50	21.070	35.724	25.027	294.0	0.00	21.06	1526.7		
0BS 75	20.500	35.735	25.190	279.4	0.00	20.49	1525.8		
0BS 100	20.140	35.665	25.207	278.7	0.00	20.12	1525.2		
0BS 150	19.890	35.668	25.300	271.3	0.00	19.88	1525.1		
0BS 199	18.650	35.582	25.558	248.6	0.00	18.61	1522.3		
0BS 298	17.020	35.573	25.850	214.0	0.00	16.97	1517.2		
0BS 496	12.180	35.082	26.863	154.9	0.00	12.11	1506.3		
0BS 598	10.180	34.818	26.779	126.4	0.00	10.11	1500.5		
0BS 785	7.450	34.545	26.987	117.8	0.00	7.27	1483.1		
0BS 1079	5.230	34.473	27.231	95.4	0.00	5.14	1489.1		
0BS 1373	3.700	34.544	27.454	73.1	0.00	3.59	1487.8		
ISL 0	21.21	35.66	24.837	300.8	0.00	21.21	1526.1	0.008	
ISL 10	21.14	35.66	24.968	300.3	0.00	21.14	1526.2	.030	
ISL 25	21.08	35.65	24.968	296.7	0.00	21.08	1526.2	.075	
ISL 50	21.07	35.72	25.027	294.0	0.00	21.06	1526.7	.149	
ISL 75	20.50	35.74	25.190	279.4	0.00	20.49	1525.8	.221	
ISL 100	20.14	35.67	25.207	278.7	0.00	20.12	1525.2	.290	
ISL 150	19.89	35.67	25.300	271.3	0.00	19.88	1525.1	.426	
ISL 200	18.64	35.58	25.581	248.3	0.00	18.60	1522.3	.558	
ISL 250	17.87	35.58	25.785	230.3	0.00	17.83	1521.0	.878	
ISL 300	16.97	35.57	25.959	213.2	0.00	16.92	1519.1	.788	
ISL 400	14.46	35.32	26.290	179.9	0.00	14.42	1512.8	.967	
ISL 500	12.13	35.06	26.808	154.5	0.00	12.06	1506.2	1.158	
ISL 600	10.00	34.80	26.783	137.1	0.00	9.93	1500.0	1.302	
ISL 800	7.32	34.54	27.009	118.8	0.00	7.24	1492.9	1.553	
ISL 1000	5.16	34.48	27.189	101.4	0.00	5.07	1489.9	1.773	
ISL 1300	4.02	34.51	27.450	78.6	0.00	3.91	1487.8	2.043	

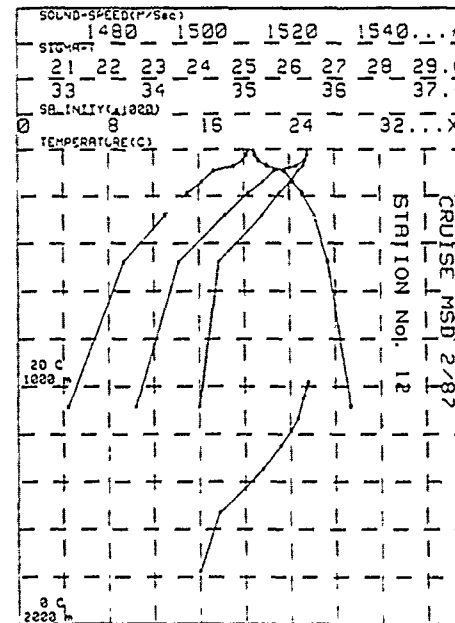
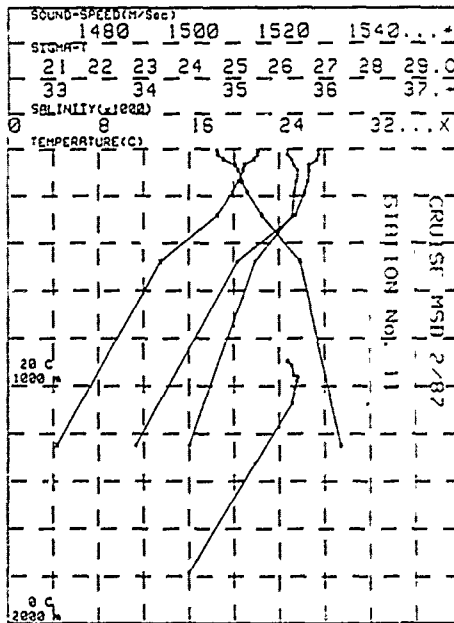
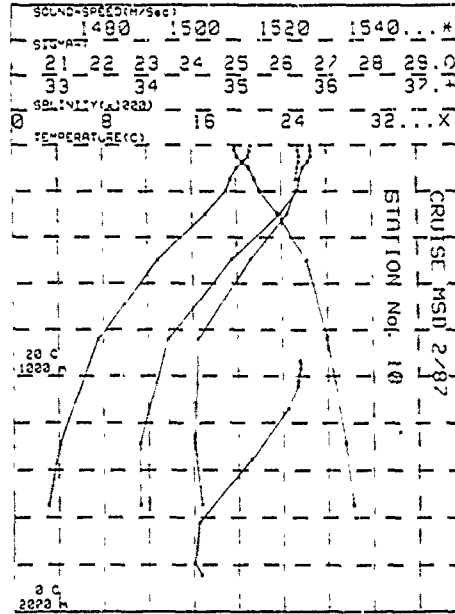
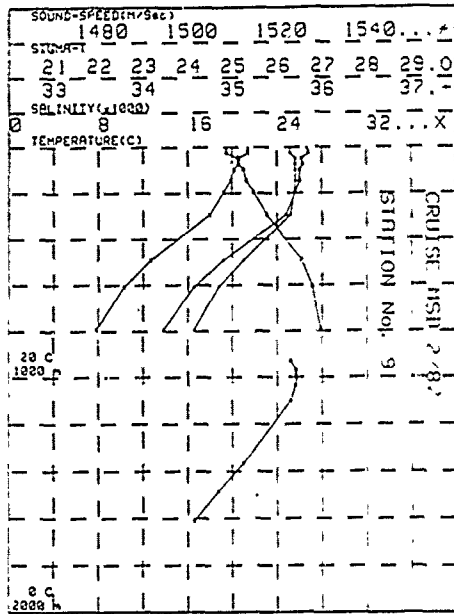
STATION 7 DATE= 14/11/87									
30.138 199.316 HSD 2/87 TIME= 0411 GHT DEPTH= 1481									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT.TDWP	S.S	Dym #	
m	°C	PSU	kg/m <sup>3</sup>	°C	ML/L	°C	M/Sec		
0BS 0	21.030	35.630	24.867	297.9	0.00	21.03	1525.8		
0BS 25	20.840	35.626	25.015	294.2	0.00	20.84	1525.9		
0BS 50	20.440	35.650	25.142	283.1	0.00	20.43	1524.9		
0BS 75	19.970	35.683	25.277	271.1	0.00	19.96	1524.1		
0BS 100	19.680	35.687	25.358	264.4	0.00	19.68	1523.7		
0BS 150	18.700	35.618	25.511	245.8	0.00	18.67	1521.7		
0BS 199	17.620	35.594	25.622	223.2	0.00	17.59	1519.4		
0BS 297	15.200	35.584	26.202	188.3	0.00	15.25	1513.7		
0BS 496	10.780	34.809	26.735	141.1	0.00	10.73	1501.2		
0BS 621	8.870	34.660	26.905	125.4	0.00	8.80	1495.2		
ISL 0	21.03	35.63	24.867	297.9	0.00	21.03	1525.8	0.000	
ISL 10	20.84	35.63	24.877	297.3	0.00	20.84	1525.8	.030	
ISL 25	20.84	35.63	25.015	294.2	0.00	20.84	1525.9	.074	
ISL 50	20.44	35.65	25.142	283.1	0.00	20.43	1524.9	.148	
ISL 75	19.97	35.68	25.277	271.1	0.00	19.96	1524.1	.215	
ISL 100	19.68	35.67	25.358	264.4	0.00	19.68	1523.7	.282	
ISL 150	18.70	35.62	25.511	245.8	0.00	18.67	1521.7	.410	
ISL 200	17.60	35.59	25.826	222.8	0.00	17.56	1519.3	.537	
ISL 250	16.40	35.49	26.030	204.7	0.00	16.36	1516.4	.834	
ISL 300	15.22	35.38	26.213	186.4	0.00	15.18	1513.5	.753	
ISL 400	12.79	35.12	26.519	160.8	0.00	12.74	1506.8	.909	
ISL 500	10.71	34.89	26.743	140.4	0.00	10.65	1501.0	1.041	
ISL 600	8.99	34.70	26.885	127.3	0.00	8.92	1496.1	1.198	

STATION 8		29.302		190.356		HSD 2/87		DEPTH= 1614	
DATE= 14/11/87				TIME= 1143 GHT					
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	OX	POT.TDWP	S.S	
m	°C	PSU	kg/m <sup>3</sup>	°C	ML/L	°C	M/Sec	M/Sec	Dyn #
0BS 0	21.350	35.638	24.865	305.7	0.00	21.35	1526.5		
0BS 23	21.330	35.637	24.890	306.1	0.00	21.33	1526.8		
0BS 47	20.480	35.670	25.152	283.0	0.00	20.45	1524.9		
0BS 70	20.220	35.718	25.253	273.2	0.00	20.21	1524.7		
0BS 94	19.980	35.705	25.306	269.0	0.00	19.96	1524.4		
0BS 142	18.450	35.577	25.432	258.7	0.00	18.39	1523.7		
0BS 180	18.130	35.642	25.633	241.1	0.00	18.10	1521.9		
0BS 288	16.620	35.580	26.035	205.5	0.00	16.57	1517.8		
0BS 483	12.200	35.584	26.816	153.3	0.00	12.14	1506.2		
0BS 563	9.510	34.764	26.835	132.3	0.00	9.44	1497.8		
0BS 786	7.120	34.521	27.025	114.3	0.00	7.04	1491.5		
0BS 938	5.970	34.481	27.147	103.2	0.00	5.88	1489.7		
0BS 1368	3.925	34.548	27.475	70.5	0.00	3.82	1486.9		
ISL 0	21.35	35.64	24.865	305.7	0.00	21.35	1526.5	0.000	
ISL 10	21.34	35.64	24.867	305.9	0.00	21.34	1526.8	.031	
ISL 23	21.33	35.64	24.818	303.5	0.00	21.33	1526.8	.078	
ISL 50	20.43	35.68	25.168	280.8	0.00	20.42	1524.9	.149	
ISL 75	20.17	35.72	25.264	272.4	0.00	20.16	1524.7	.218	
ISL 100	19.93	35.70	25.288	264.1	0.00	19.91	1524.4	.286	
ISL 150	19.27	35.67	25.465	255.7	0.00	19.25	1523.4	.417	
ISL 200	18.34	35.84	25.677	237.1	0.00	18.31	1521.5	.540	
ISL 250	17.26	35.60	25.668	218.5	0.00	17.34	1519.5	.655	
ISL 300	16.38	35.46	25.677	200.9	0.00	16.33	1517.5	.779	
ISL 350	14.21	35.32	25.644	184.1	0.00	14.13	1511.9	1.048	
ISL 500	13.67	35.02	26.859	148.1	0.01	13.61	1504.5	1.113	
ISL 800	9.24	34.72	26.855	130.4	0.00	9.17	1497.1	1.250	
ISL 800	8.06	34.31	27.048	123.9	0.00	8.01	1491.2	1.462	
ISL 1000	6.84	34.14	27.064	116.1	0.00	6.77	1484.8	1.703	
ISL 1300	3.65	34.34	27.423	73.9	0.00	3.75	1487.2	1.984	



STATION 9										STATION 10									
DATE= 14/11/87		29.308		156.196		MNO 2/87		DEPTH= 2357		DATE= 14/11/87		29.308		156.196		MNO 2/87		DEPTH= 2999	
TIME= 1810 GMT										TIME= 2342 GMT									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT,TEMP	S.S	Dyn m		DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT,TEMP	S.S	Dyn m	
m	°C	PSU	kg/m <sup>3</sup>	CL/T	°C	M/Sec				m	°C	PSU	kg/m <sup>3</sup>	CL/T	°C	M/Sec			
0	21.410	35.851	24.878	306.3	0.00	21.41	1328.7			0	21.270	35.698	24.846	299.9	0.00	21.27	1326.3		
25	21.400	35.851	24.881	307.0	0.00	21.40	1327.0			25	21.180	35.686	24.946	296.7	0.00	21.18	1326.3		
40	20.840	35.707	25.131	284.0	0.00	20.83	1325.3			50	21.030	35.697	25.018	294.9	0.00	21.02	1326.3		
75	20.570	35.708	25.149	282.2	0.00	20.56	1325.7			75	20.600	35.682	25.121	285.0	0.00	20.59	1325.8		
97	20.160	35.707	25.255	274.0	0.00	20.16	1325.0			100	20.030	35.678	25.271	272.8	0.00	20.01	1324.0		
148	19.920	35.713	25.320	268.8	0.00	19.89	1325.2			150	19.500	35.663	25.400	265.0	0.00	19.47	1324.0		
194	19.270	35.696	25.486	255.3	0.00	19.23	1324.2			200	19.090	35.640	25.504	253.8	0.00	19.05	1323.7		
257	17.990	35.651	25.774	230.9	0.00	17.94	1322.1			300	17.100	35.581	25.908	218.2	0.00	17.11	1319.6		
425	12.870	35.124	26.357	156.7	0.00	12.60	1308.0			500	12.860	35.115	26.334	183.0	0.00	12.79	1308.8		
608	10.320	34.647	26.778	139.1	0.00	72.25	1501.3			641	7.590	34.558	26.981	115.3	0.00	7.48	1494.5		
752	7.810	34.371	26.965	121.4	0.00	7.73	1494.7			1287	4.120	34.508	27.382	80.4	0.00	4.02	1486.0		
ISL 0	21.41	35.85	24.878	306.3	0.00	21.41	1328.7	0.000		1549	3.064	34.568	27.549	63.4	0.00	2.93	1486.1		
ISL 10	21.41	35.85	24.880	306.8	0.00	21.40	1328.8	.031		ISL 0	21.27	35.69	24.846	299.9	0.00	21.27	1326.3	0.000	
ISL 25	21.39	35.83	24.896	305.6	0.00	21.39	1328.9	.077		ISL 10	21.24	35.69	24.952	296.7	0.00	21.24	1326.4	.030	
ISL 50	20.43	35.71	25.133	283.9	0.00	20.42	1325.3	.150		ISL 25	21.18	35.69	24.966	296.7	0.00	21.18	1326.5	.075	
ISL 75	20.53	35.71	25.160	282.3	0.00	20.52	1325.6	.221		ISL 50	21.03	35.70	25.033	294.9	0.00	21.02	1326.5	.149	
ISL 100	20.17	35.71	25.257	273.9	0.00	20.16	1325.1	.290		ISL 75	20.60	35.69	25.131	285.0	0.00	20.59	1325.8	.222	
ISL 150	19.87	35.71	25.342	267.5	0.00	19.84	1325.1	.426		ISL 100	20.03	35.68	25.271	272.8	0.00	20.01	1324.0	.291	
ISL 200	19.24	35.70	25.497	254.5	0.00	19.20	1324.1	.558		ISL 150	19.50	35.68	25.400	265.0	0.00	19.47	1324.0	.425	
ISL 250	18.87	35.67	25.637	242.8	0.00	18.83	1323.4	.660		ISL 200	19.09	35.65	25.504	253.8	0.00	19.05	1323.7	.554	
ISL 300	17.81	35.63	25.805	228.1	0.00	17.75	1321.8	.786		ISL 250	18.14	35.62	25.713	235.3	0.00	18.10	1321.6	.678	
ISL 400	14.96	35.36	26.253	187.4	0.00	14.90	1314.2	1.009		ISL 300	17.16	35.59	25.908	218.2	0.00	17.11	1319.6	.790	
ISL 500	12.31	35.10	26.571	156.2	0.00	12.44	1307.3	1.184		ISL 400	14.96	35.33	26.254	187.2	0.00	14.84	1314.2	.994	
ISL 600	10.46	34.86	26.785	140.3	0.00	10.39	1301.7	1.354		ISL 500	12.86	35.14	26.334	183.0	0.00	12.79	1308.8	1.170	
										ISL 600	11.08	34.83	26.682	148.4	0.00	10.99	1303.7	1.358	
										ISL 800	8.07	34.60	26.844	123.9	0.00	7.98	1495.6	1.600	
										ISL 1000	6.09	34.31	27.146	104.0	0.00	6.00	1491.2	1.828	
										ISL 1300	4.05	34.51	27.382	79.4	0.00	3.95	1486.0	2.105	
										ISL 1500	3.21	34.57	27.531	66.2	0.00	3.10	1486.1	2.252	

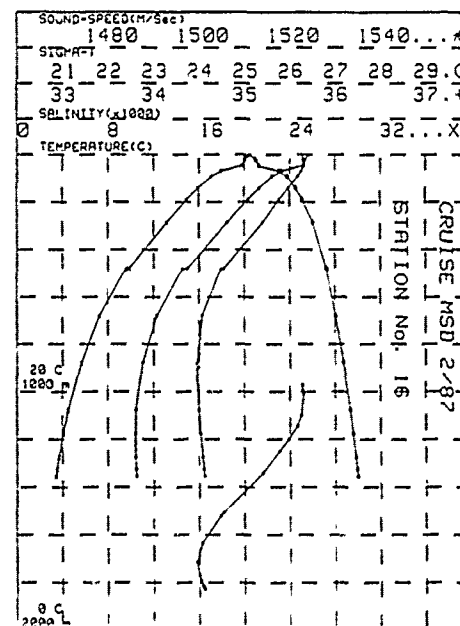
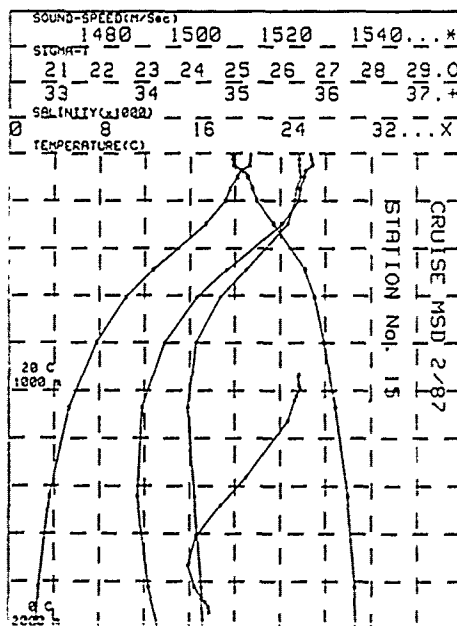
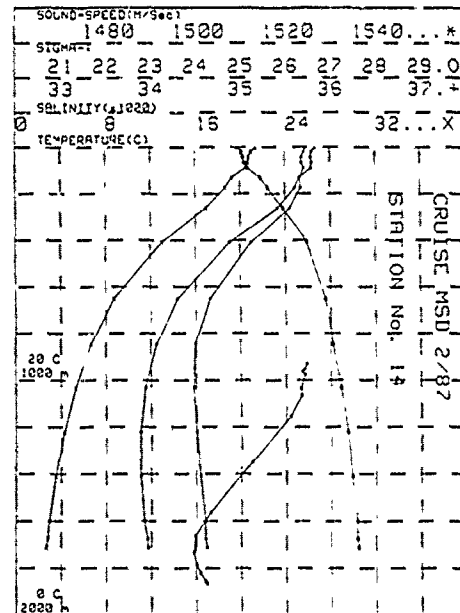
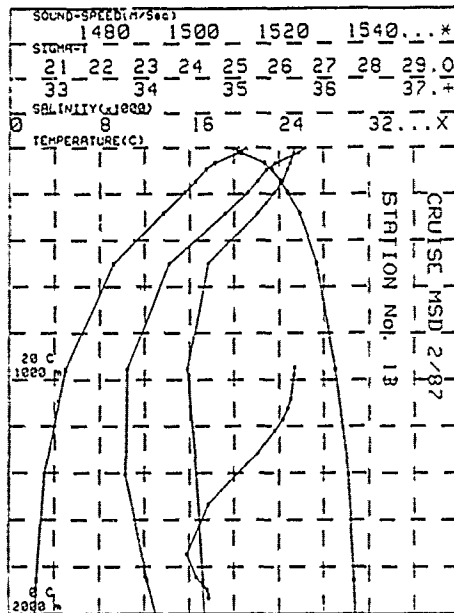
STATION 11										STATION 12									
DATE= 26/11/87		29.305		155.306		MNO 2/87		DEPTH= 4760		DATE= 28/11/87		29.287		156.136		MNO 2/87		DEPTH= 4760	
TIME= 1231 GMT										TIME= 1813 GMT									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT,TEMP	S.S	Dyn m		DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	CL/T	POT,TEMP	S.S	Dyn m	
m	°C	PSU	kg/m <sup>3</sup>	CL/T	°C	M/Sec				m	°C	PSU	kg/m <sup>3</sup>	CL/T	°C	M/Sec			
0	22.170	35.800	24.627	330.2	0.00	22.17	1328.6			0	20.360	35.701	25.202	273.5	0.00	20.36	1323.9		
22	22.060	35.592	24.647	329.2	0.00	22.06	1328.7			23	20.210	35.693	25.238	273.1	0.00	20.21	1323.9		
45	21.760	35.636	24.771	316.2	0.00	21.75	1328.3			46	19.860	35.677	25.311	266.8	0.00	19.87	1323.4		
68	20.510	35.640	25.022	293.1	0.00	20.50	1326.5			70	19.080	35.649	25.503	249.3	0.00	19.05	1321.4		
91	20.780	35.702	25.093	297.0	0.00	20.74	1326.5			92	17.290	35.586	25.899	212.6	0.00	17.27	1318.6		
138	20.410	35.692	25.182	282.4	0.00	20.38	1326.3			140	16.290	35.506	26.078	15.7	0.00	16.26	1314.2		
186	19.860	35.660	25.305	272.3	0.00	19.85	1325.6			186	15.870	35.391	26.221	178.6	0.00	14.94	1510.9		
283	18.570	35.645	25.625	245.0	0.00	18.52	1323.6			283	13.010	35.197	26.544	155.5	0.00	12.97	1505.8		
476	13.590	35.738	26.464	166.8	0.00	13.46	1310.8			478	9.380	34.722	26.842	129.3	0.00	9.31	1495.5		
1248	4.540	34.504	27.358	83.1	0.00	4.24	1446.3			1064	4.470	34.500	27.359	83.5	0.00	4.36	1486.1		
ISL 0	22.17	35.80	24.627	330.2	0.00	22.17	1328.6	0.008		ISL 0	20.36	35.70	25.202	273.5	0.00	20.36	1323.9	0.008	
ISL 10	22.16	35.80	24.636	329.8	0.00	22.15	1328.7	.033		ISL 10	20.32	35.70	25.212	273.0	0.00	20.32	1323.9	.026	
ISL 25	22.07	35.80	24.656	328.5	0.00	22.05	1328.6	.088		ISL 25	20.25	35.69	25.238	273.0	0.00	20.19	1323.8	.061	
ISL 50	21.52	35.64	24.841	311.7	0.00	21.51	1327.7	.163		ISL 50	19.62	35.64	25.328	246.5	0.00	19.61	1323.3	.141	
ISL 75	20.67	35.68	25.047	295.1	0.00	20.65	1326.5	.236		ISL 75	19.19	35.63	25.409	239.6	0.00	18.95	1320.9	.257	
ISL 100	20.71	35.70	25.108	288.0	0.00	20.69	1326.5	.311		ISL 100	17.14	35.58	25.824	200.1	0.00	17.12	1318.3	.297	
ISL 150	20.58	35.69	25.210	280.1	0.00	20.56	1326.2	.453		ISL 150	15.87	35.46	26.124	192.5	0.00	15.85	1315.7	.496	
ISL 200	19.74	35.61	25.347	266.8	0.00	19.70	1323.5	.590		ISL 200	14.72	35.37	26.218	175.3	0.00	14.69	1312.2	.641	
ISL 250	19.10	35.63	25.509	255.1	0.00	19.08	1324.9	.721		ISL 250	13.68	35.28	26.441	162.8	0.00	13.64	1307.5	.758	
ISL 300	18.09	35.61	25.708	237.4	0.00	18.04	1322.3	.844		ISL 300	12.63	35.15	26.773	145.0	0.00	12.61	1304.8	.911	
ISL 400	15.43	35.33	26.156	190.8	0.00	15.37	1315.6	1.063		ISL 400	10.70	34.89	26.431	130.1	0.00	10.63	1499.2	1.334	





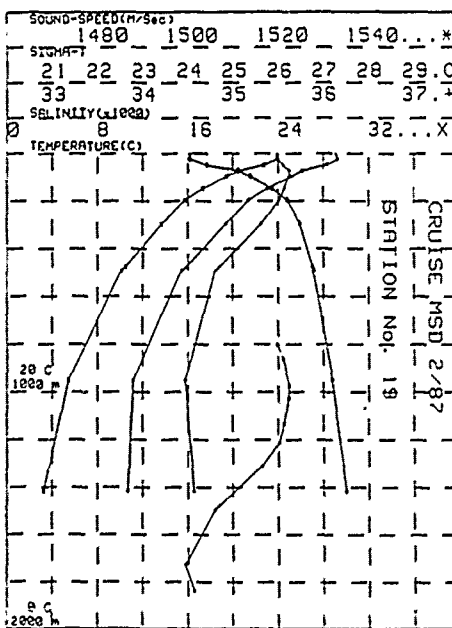
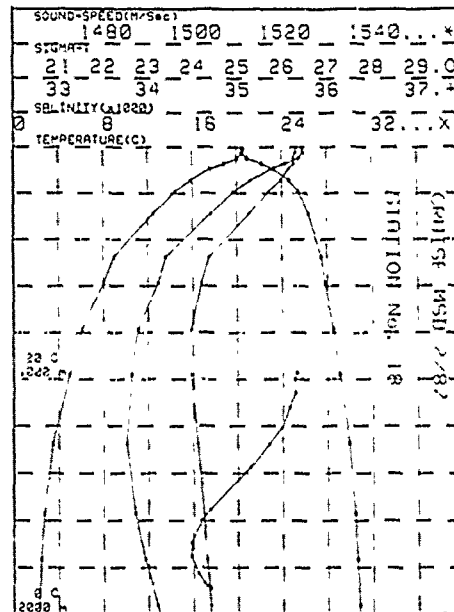
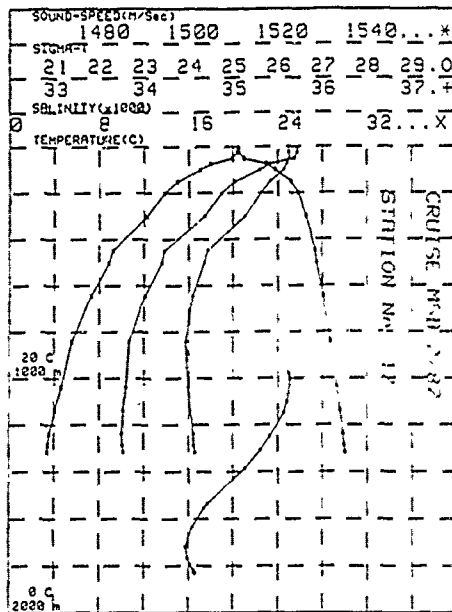
STATION 13				29.305 137.32E				MSD 2/87					
DATE= 29/11/87				TIME= 0435 GHT				DEPTH= 3500					
DEPTH	m	TEMP	°C	SALINITY	P	SIGMA-T	CL/T	A.S.V	CL/T	OX	POT.TEMP	S.S	Dyn. #
088	0	21.070	35.872	24.948	295.9	0.00	21.07	1525.8	0.00	21.07	1525.8	0.00	0.00
088	23	20.250	35.644	25.166	279.8	0.00	20.25	1524.3	0.00	20.25	1524.3	0.00	0.00
088	70	18.270	35.629	25.685	232.0	0.00	18.27	1519.2	0.00	18.27	1519.2	0.00	0.00
088	97	17.490	35.595	25.854	218.7	0.00	17.47	1517.3	0.00	17.47	1517.3	0.00	0.00
088	147	16.540	35.542	26.040	200.5	0.00	16.52	1515.2	0.00	16.52	1515.2	0.00	0.00
088	194	15.580	35.449	26.190	187.6	0.00	15.55	1513.0	0.00	15.55	1513.0	0.00	0.00
088	244	13.670	35.258	26.455	164.4	0.00	13.63	1506.1	0.00	13.63	1506.1	0.00	0.00
088	501	9.280	34.713	26.848	129.1	0.00	9.22	1489.6	0.00	9.22	1489.6	0.00	0.00
088	954	5.030	34.477	27.257	91.1	0.00	4.99	1468.2	0.00	4.99	1468.2	0.00	0.00
088	1408	3.100	34.580	27.541	63.4	0.00	3.00	1485.9	0.00	3.00	1485.9	0.00	0.00
088	1834	2.420	34.637	27.643	52.1	0.00	2.29	1490.6	0.00	2.29	1490.6	0.00	0.00
088	2307	2.028	34.706	27.734	45.7	0.00	1.88	1496.7	0.00	1.88	1496.7	0.00	0.00
088	2750	1.593	34.723	27.781	40.4	0.00	1.40	1502.4	0.00	1.40	1502.4	0.00	0.00
088	3016	1.306	34.723	27.796	38.3	0.00	1.17	1506.2	0.00	1.17	1506.2	0.00	0.00
088	3194	1.232	34.724	27.801	37.9	0.00	1.10	1509.0	0.00	1.10	1509.0	0.00	0.00
134	0	21.07	35.87	24.948	295.9	0.00	21.07	1525.8	0.00	21.07	1525.8	0.00	0.00
134	10	20.80	35.67	25.059	288.3	0.00	20.80	1523.2	0.00	20.80	1523.2	0.00	0.00
134	23	20.18	35.64	25.184	277.2	0.00	20.18	1521.1	0.00	20.18	1521.1	0.00	0.00
134	50	19.05	35.64	25.499	246.1	0.00	19.04	1511.1	0.00	19.04	1511.1	0.00	0.00
134	75	18.11	35.62	25.720	228.8	0.00	18.10	1518.8	0.00	18.10	1518.8	0.00	0.00
134	100	17.43	35.59	25.844	215.7	0.00	17.42	1517.2	0.00	17.42	1517.2	0.00	0.00
134	130	16.48	35.54	26.049	199.7	0.00	16.48	1515.1	0.00	16.48	1515.1	0.00	0.00
134	200	15.49	35.44	26.263	186.3	0.00	15.48	1512.8	0.00	15.48	1512.8	0.00	0.00
134	250	14.43	35.34	26.358	173.1	0.00	14.29	1510.1	0.00	14.29	1510.1	0.00	0.00
134	300	13.34	35.21	26.444	161.7	0.00	13.20	1507.1	0.00	13.20	1507.1	0.00	0.00
134	400	11.15	34.93	26.880	144.3	0.00	11.10	1500.8	0.00	11.10	1500.8	0.00	0.00
134	500	9.20	34.71	26.847	129.2	0.00	9.14	1495.6	0.00	9.14	1495.6	0.00	0.00
134	600	8.18	34.63	26.948	120.0	0.00	8.10	1492.8	0.00	8.10	1492.8	0.00	0.00
134	800	6.23	34.52	27.131	103.0	0.00	6.15	1488.4	0.00	6.15	1488.4	0.00	0.00
134	1000	4.78	34.49	27.292	87.7	0.00	4.71	1484.2	0.00	4.71	1484.2	0.00	0.00
134	1200	3.45	34.58	27.448	68.5	0.00	3.35	1489.9	0.00	3.35	1489.9	0.00	0.00
134	1500	2.84	34.60	27.570	60.7	0.00	2.83	1486.7	0.00	2.83	1486.7	0.00	0.00
134	2000	2.30	34.66	27.684	50.0	0.00	2.18	1492.6	0.00	2.18	1492.6	0.00	0.00
134	2500	1.83	34.72	27.753	43.1	0.00	1.65	1499.1	0.00	1.65	1499.1	0.00	0.00
134	3000	1.40	34.72	27.793	38.4	0.00	1.18	1505.9	0.00	1.18	1505.9	0.00	0.00

STATION 14				29.318 158.17E				MSD 2/87													
DATE= 29/11/87				TIME= 1130 GHT				DEPTH= 1800													
DEPTH	m	TEMP	°C	SALINITY	PSU	SIGMA-T	CL/T	A.S.V	CL/T	OX	POT.TEMP	S.S	Dyn.#								
088	0	21.410	35.722	24.940	300.5	0.00	21.41	1528.8	0.00	21.41	1528.8	0.00									
088	21	20.970	35.710	25.044	291.3	0.00	20.97	1525.9	0.00	20.97	1525.9	0.00									
088	44	20.780	35.688	25.077	286.0	0.00	20.77	1523.8	0.00	20.77	1523.8	0.00									
088	68	20.700	35.664	25.086	286.0	0.00	20.68	1521.9	0.00	20.68	1521.9	0.00									
088	91	20.490	35.711	25.175	281.4	0.00	20.47	1525.0	0.00	20.47	1525.0	0.00									
088	132	19.300	35.665	25.454	218.2	0.00	19.28	1523.1	0.00	19.28	1523.1	0.00									
088	155	17.680	35.672	26.017	212.8	0.00	17.66	1520.8	0.00	17.66	1520.8	0.00									
088	263	16.930	35.548	25.953	212.8	0.00	16.89	1519.3	0.00	16.89	1519.3	0.00									
088	408	13.020	35.123	26.485	164.4	0.00	12.93	1507.8	0.00	12.93	1507.8	0.00									
088	653	8.720	34.658	26.985	122.0	0.00	8.65	1496.1	0.00	8.65	1496.1	0.00									
088	848	6.880	34.493	27.500	82.0	0.00	6.80	1485.8	0.00	6.80	1485.8	0.00									
088	1034	5.330	34.475	27.220	66.1	0.00	5.24	1486.8	0.00	5.24	1486.8	0.00									
088	1222	4.290	34.504	27.361	62.2	0.00	4.19	1487.6	0.00	4.19	1487.6	0.00									
088	1310	3.540	34.545	27.523	58.7	0.00	3.44	1488.8	0.00	3.44	1488.8	0.00									
088	1500	2.940	34.598	27.570	61.3	0.00	2.82	1486.4	0.00	2.82	1486.4	0.00									
088	1678	2.640	34.506	27.585	60.0	0.00	2.72	1490.4	0.00	2.72	1490.4	0.00									
088	1714	2.700	34.621	27.610	57.4	0.00	2.58	1489.4	0.00	2.58	1489.4	0.00									
ISL	0	21.41	35.73	24.940	300.5	0.00	21.41	1528.8	0.00	21.41	1528.8	0.00	0.000								
ISL	10	21.17	35.72	24.998	295.3	0.00	21.17	1526.3	0.00	21.17	1526.3	0.00	0.030								
ISL	20	20.93	35.70	25.051	290.8	0.00	20.92	1523.9	0.00	20.92	1523.9	0.00	0.104								
ISL	30	20.77	35.69	25.063	286.7	0.00	20.76	1521.8	0.00	20.76	1521.8	0.00	0.148								
ISL	75	20.67	35.70	25.113	268.9	0.00	20.66	1525.9	0.00	20.66	1525.9	0.00	0.218								
ISL	100	20.18	35.70	25.248	218.9	0.00	20.18	1523.1	0.00	20.18	1523.1	0.00	0.299								
ISL	130	19.06	35.67	25.522	250.3	0.00	19.03	1522.8	0.00	19.03	1522.8	0.00	0.418								
ISL	200	16.21	35.71	26.017	206.7	0.00	16.20	1520.8	0.00	16.20	1520.8	0.00	0.540								
ISL	250	17.22	35.37	25.904	217.0	0.00	17.18	1519.0	0.00	17.18	1519.0	0.00	0.633								
ISL	300	13.84	35.43	26.102	188.6	0.00	13.78	1515.4	0.00	13.78	1515.4	0.00	0.737								
ISL	400	13.21	35.14	26.481	166.5	0.00	13.15	1506.9	0.00	13.15	1506.9	0.00	0.840								
ISL	500	11.17	34.68	27.000	122.0	0.00	11.08	1498.8	0.00	11.08	1498.8	0.00	1.099								
ISL	600	9.48	34.73	26.823	113.3	0.00	9.41	1494.0	0.00	9.41	1494.0	0.00	1.242								
ISL	800	7.14	34.52	27.011	123.4	0.00	7.08	1492.2	0.00	7.08	1492.2	0.00	1.489								
ISL	1000	5.56	34.48	27.183	98.8	0.00	5.49	1499.1	0.00	5.49	1499.1	0.00	1.700								
ISL	1200	3.30	34.29	27.408	77.8	0.00	3.27	1497.7	0.00	3.27	1497.7	0.00	1.987								
ISL	1500	3.20	34.58	27.329	86.4	0.00	3.09	1487.8	0.00	3.09	1487.8	0.00	2.111								



STATION 17 DATE= 30/11/87										31.155 160.000 HSD 2/87 TIME= 1225 GMT DEPTH= 1370									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	SE	POT-TEMP	S.S			DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	SE	POT-TEMP	S.S		
m	°C	PSU	CL/T	ML/L	°C	N/Sec	Dyn m			m	°C	PSU	CL/T	ML/L	°C	N/Sec	Dyn m		
0	20.480	35.618	25.105	284.8	0.00	20.48	1524.2			0	20.480	35.618	25.105	284.8	0.00	20.48	1524.2		
025	20.400	35.624	25.113	285.1	0.00	20.40	1524.4			025	20.400	35.624	25.113	285.1	0.00	20.40	1524.4		
051	19.980	35.634	25.252	272.6	0.00	19.97	1523.7			051	19.980	35.634	25.252	272.6	0.00	19.97	1523.7		
076	17.950	35.601	25.746	226.4	0.00	17.94	1518.3			076	17.950	35.601	25.746	226.4	0.00	17.94	1518.3		
102	17.010	35.566	25.947	208.0	0.00	16.99	1513.9			102	17.010	35.566	25.947	208.0	0.00	16.99	1513.9		
152	15.000	35.415	26.293	176.4	0.00	14.98	1510.4			152	15.000	35.415	26.293	176.4	0.00	14.98	1510.4		
202	13.850	35.308	26.457	161.9	0.00	13.82	1507.4			202	13.850	35.308	26.457	161.9	0.00	13.82	1507.4		
302	12.790	35.134	26.636	146.8	0.00	12.75	1503.6			302	12.790	35.134	26.636	146.8	0.00	12.75	1503.6		
450	9.280	34.716	26.851	127.9	0.00	9.23	1494.8			450	9.280	34.716	26.851	127.9	0.00	9.23	1494.8		
503	8.900	34.676	26.861	125.7	0.00	8.84	1494.2			503	8.900	34.676	26.861	125.7	0.00	8.84	1494.2		
645	7.280	34.541	27.018	113.3	0.00	7.22	1490.2			645	7.280	34.541	27.018	113.3	0.00	7.22	1490.2		
842	5.630	34.473	27.183	96.0	0.00	5.56	1486.6			842	5.630	34.473	27.183	96.0	0.00	5.56	1486.6		
1038	4.620	34.491	27.315	85.6	0.00	4.54	1485.9			1038	4.620	34.491	27.315	85.6	0.00	4.54	1485.9		
1136	4.084	34.518	27.394	77.8	0.00	3.99	1485.4			1136	4.084	34.518	27.394	77.8	0.00	3.99	1485.4		
1236	3.622	34.556	27.471	70.2	0.00	3.53	1485.2			1236	3.622	34.556	27.471	70.2	0.00	3.53	1485.2		
1287	3.451	34.580	27.491	66.2	0.00	3.35	1485.3			1287	3.451	34.580	27.491	66.2	0.00	3.35	1485.3		
1317	3.380	34.574	27.509	64.5	0.00	3.26	1485.3			1317	3.380	34.574	27.509	64.5	0.00	3.26	1485.3		
ISL	0	20.48	35.62	25.105	284.8	0.00	20.48	1524.2	0.000	ISL	0	20.48	35.62	25.105	284.8	0.00	20.48	1524.2	0.000
ISL	10	20.45	35.62	25.106	284.1	0.00	20.45	1524.3	0.028	ISL	10	20.45	35.62	25.106	284.1	0.00	20.45	1524.3	0.028
ISL	25	20.40	35.62	25.113	285.1	0.00	20.40	1524.4	0.071	ISL	25	20.40	35.62	25.113	285.1	0.00	20.40	1524.4	0.071
ISL	50	20.03	35.63	25.242	273.7	0.00	20.02	1523.8	0.140	ISL	50	20.03	35.63	25.242	273.7	0.00	20.02	1523.8	0.140
ISL	75	18.01	35.60	25.732	227.7	0.00	18.00	1518.5	0.203	ISL	75	18.01	35.60	25.732	227.7	0.00	18.00	1518.5	0.203
ISL	100	17.04	35.57	25.932	209.3	0.00	17.07	1516.1	0.256	ISL	100	17.04	35.57	25.932	209.3	0.00	17.07	1516.1	0.256
ISL	150	15.06	35.42	26.282	177.3	0.00	15.04	1510.8	0.315	ISL	150	15.06	35.42	26.282	177.3	0.00	15.04	1510.8	0.315
ISL	200	13.88	35.31	26.452	162.4	0.00	13.86	1507.5	0.379	ISL	200	13.88	35.31	26.452	162.4	0.00	13.86	1507.5	0.379
ISL	250	13.15	35.24	26.548	154.4	0.00	13.11	1505.8	0.419	ISL	250	13.15	35.24	26.548	154.4	0.00	13.11	1505.8	0.419
ISL	300	12.32	35.14	26.635	147.1	0.00	12.28	1503.7	0.494	ISL	300	12.32	35.14	26.635	147.1	0.00	12.28	1503.7	0.494
ISL	400	9.96	34.81	26.800	132.2	0.00	9.93	1496.8	0.735	ISL	400	9.96	34.81	26.800	132.2	0.00	9.93	1496.8	0.735
ISL	500	8.92	34.68	26.878	123.9	0.00	8.87	1494.2	0.864	ISL	500	8.92	34.68	26.878	123.9	0.00	8.87	1494.2	0.864
ISL	600	7.75	34.58	26.978	117.1	0.00	7.69	1491.3	0.985	ISL	600	7.75	34.58	26.978	117.1	0.00	7.69	1491.3	0.985
ISL	800	5.93	34.48	27.150	101.0	0.00	5.88	1487.3	1.204	ISL	800	5.93	34.48	27.150	101.0	0.00	5.88	1487.3	1.204
ISL	1000	4.83	34.48	27.286	86.4	0.00	4.74	1486.1	1.282	ISL	1000	4.83	34.48	27.286	86.4	0.00	4.74	1486.1	1.282
ISL	1300	3.42	34.58	27.499	87.5	0.00	3.32	1485.4	1.626	ISL	1300	3.42	34.58	27.499	87.5	0.00	3.32	1485.4	1.626

STATION 18										31.243 159.206 HSD 2/87									
DATE= 30/11/87										TIME= 1742 GMT DEPTH= 2080									
DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	SE	POT-TEMP	S.S			DEPTH	TEMP	SALINITY	SIGMA-T	A.S.V	SE	POT-TEMP	S.S		
m	°C	PSU	CL/T	ML/L	°C	N/Sec	Dyn m			m	°C	PSU	CL/T	ML/L	°C	N/Sec	Dyn m		
006	0	20.590	35.657	25.107	284.6	0.00	20.59	1524.3		0	20.590	35.657	25.107	284.6	0.00	20.59	1524.3		
025	24	20.550	35.658	25.118	284.4	0.00	20.55	1524.8		025	20.550	35.658	25.118	284.4	0.00	20.55	1524.8		
068	48	20.060	35.631	25.229	274.7	0.00	20.05	1523.8		068	20.060	35.631	25.229	274.7	0.00	20.05	1523.8		
086	108	18.840	35.636	25.549	249.0	0.00	18.83	1520.6		086	18.840	35.636	25.549	249.0	0.00	18.83	1520.6		
096	146	17.550	35.576	25.625	219.3	0.00	17.53	1517.4		096	17.550	35.576	25.625	219.3	0.00	17.53	1517.4		
145	183	15.820	35.466	26.185	186.5	0.00	15.80	1512.9		145	15.820	35.466	26.185	186.5	0.00	15.80	1512.9		
193	193	14.430	35.346	26.364	170.7	0.00	14.40	1509.2		193	14.430	35.346	26.364	170.7	0.00	14.40	1509.2		
206	206	12.310	35.134	26.595	150.6	0.00	12.27	1504.1		206	12.310	35.134	26.595	150.6	0.00	12.27	1504.1		
478	478	8.980	34.686	26.879	125.4	0.00	8.91	1494.0		478	8.980	34.686	26.879	125.4	0.00	8.91	1494.0		
586	586	8.030	34.583	26.950	119.6	0.00	7.97	1492.2		586	8.030	34.583	26.950	119.6	0.00	7.97	1492.2		
786	786	6.120	34.480	27.127	103.4	0.00	6.05	1487.8		786	6.120	34.480	27.127	103.4	0.00	6.05	1487.8		
962	962	4.950	34.477	27.266	90.3	0.00	4.87	1486.3		962	4.950	34.477	27.266	90.3	0.00	4.87	1486.3		
1276	1276	3.490	34.550	27.480	69.3	0.00	3.38	1485.3		1276	3.490	34.550	27.480	69.3	0.00	3.38	1485.3		
1570	1570	2.752	34.617	27.602	57.5	0.00	2.64	1487.2		1570	2.752	34.617	27.602	57.5	0.00	2.64	1487.2		
1764	1764	2.474	34.652	27.654	52.6	0.00	2.35	1489.3		1764	2.474	34.652	27.654	52.6	0.00	2.35	1489.3		
1960	1960	2.321	34.685	27.701	48.6	0.00	2.18	1492.0		1960	2.321	34.685	27.701	48.6	0.00	2.18	1492.0		
2006	2006	2.271	34.685	27.667	48.0	0.00	2.13	1492.6		2006	2.271	34.685	27.667	48.0	0.00	2.13	1492.6		
ISL	0	20.59	35.66	25.107	284.6	0.00	20.59	1524.3	0.000	ISL	0	20.59	35.66	25.107	284.6	0.00	20.59	1524.3	0.000
ISL	10	20.57	35.66	25.112	284.3	0.00	20.57	1524.8	0.028	ISL	10	20.57	35.66	25.112	284.3	0.00	20.57	1524.8	0.028
ISL	25	20.24	35.66	25.118	284.4	0.00	20.24	1524.7	0.071	ISL	25	20.24	35.66	25.118	284.4	0.00	20.24	1524.7	0.071
ISL	50	19.98	35.63	25.257	273.1	0.00	19.98	1523.8	0.141	ISL	50	19.98	35.63	25.257	273.1	0.00	19.98	1523.8	0.141
ISL	75	18.66	35.63	25.586	241.4	0.00	18.65	1520.4	0.205	ISL	75	18.66	35.63	25.586	241.4	0.00	18.65	1520.4	0.205
ISL	100	17.45	35.57	25.854	218.4	0.00	17.36	1517.1	0.262	ISL	100	17.45	35.57	25.854	218.4	0.00	17.36	1517.1	0.262
ISL	150	13.60	35.47	26.186	186.5	0.00	13.54	1512.3	0.482	ISL	150	13.60	35.47	26.186	186.5	0.00	13.54	1512.3	0.482
ISL	200	10.29	35.39	26.519	166.1	0.00	10.20	1507.5	0.682	ISL	200	10.29	35.39	26.519	166.1	0.00	10.20	1507.5	0.682
ISL	250	13.27	35.52	26.509	156.1	0.00	13.23	1506.1	0.830	ISL	250	13.27	35.52	26.509	156.1	0.00	13.23	1506.1	0.830
ISL	300	12.21	35.59	26.619	146.4	0.00	12.17	1503.2	0.912	ISL	300	12.21	35.59	26.619	146.4	0.00	12.17	1503.2	0.912
ISL	400	10.09	34.58	26.789	133.3	0.00	10.05	1497.0	1.075	ISL	400	10.09	34.58	26.789	133.3	0.00	10.05	1497.0	1.075
ISL	500	8.77	34.68	26.992	120.4	0.00	8.70	1493.5	1.240	ISL	500	8.77	34.68	26.992	120.4	0.00	8.70	1493.5	1.240
ISL	600	7.98	34.58	26.942	116.7	0.00	7.83	1491.6	1.003	ISL	600	7.98	34.58	26.942	116.7	0.00	7.83	1491.6	1.003
ISL	800	8.03	34.48	27.137	102.5	0.00	5.96	1487.7	1.224	ISL	800	8.03	34.48	27.137	102.5	0.00	5.96	1487.7	1.224
ISL	1000	4.64	34.48	27.282	86.8	0.00	4.76	1486.2	1.418	ISL	1000	4.64	34.48	27.282	86.8	0.00	4.76	1486.2	1.418
ISL	1500	3.48	34.58	27.482	66.2	0.00	3.22	1485.1	1.813	ISL	1500	3.48	34.58	27.482	66.2	0.00	3.22	1485.1	1.813
ISL	2000	2.48	34.79	27.697	58.8	0.00	2.78	1486.8	1.947	ISL	2000	2.48	34.79	27.697	58.8	0.00	2.78	1486.8	1.947
ISL	2000	2.32	34.58	27.696	48.6	0.00	2.14	1483.3	2.080	ISL	2000	2.32	34.58	27.696	48.6	0.00	2.14	1483.3	2.080



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Winch operations and station keeping were controlled by naval staff. Data processing programmes used are versions corrected and updated by the author from programs written by R.L. May (1969). All oxygen determinations were made by Mr Barry Scott.

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(U) Nansen station data taken by Maritime Systems Division (Sydney), (formerly known as RANRL) or Royal Australian Navy Research Laboratory, are presented as tables and plots. The Nansen stations were occupied in the East Indian and southwest Pacific Oceans between November 1982 and December 1987 by Royal Australian Navy oceanographic research vessels HMAS Kimbla and HMAS Cook. The data tables are also available on floppy disk.

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